Ontario's eHealth Strategy

2009-2012

Ontario

eHealth Ontario

Table of Contents

Executive Summary 1

1. Introduction 1
- Background 2
- Overview of the Report 2

2. Approach to Developing Ontario's eHealth Strategy 2009-2012 3
- Grounding the eHealth Strategy in the Vision, Mission and Mandate of eHealth Ontario 4
- Using Principles to Guide the Development and Implementation of the Strategy 5
- Learning from the eHealth Efforts of Others 7
  - Ontario Telemedicine Network (OTN) 7
  - Ontario Laboratory Information System (OLIS) 7
  - Diagnostic Imaging Repositories (DI/PACS) 8
  - Wait Times Information System (WTIS) 8
  - Alberta netCARE 9
  - UK National Care Records Service (NCRS) 9
  - Denmark eHealth Portal 10
  - Engaging Stakeholders in Developing the Strategy 10

3. Overview of the Strategy 11
- Ontario's eHealth Strategy 2009-2012 13
- Clinical Priorities 14
  - Diabetes Management 15
  - Medication Management 18
  - Wait Times 21
- Foundational Priorities 24
  - Cornerstone Information Systems 25
  - Clinical Activity Information Systems 28
  - Technology Services 31
  - Enabling Practices and Talent Management 34
- How the Strategy will Benefit Ontarians 36

4. Executing the Strategy 37
- Leveraging and Partnering with Others to Execute the Strategy 38
- Engaging Thought and Delivery Leaders 40
- Using the Most Appropriate Delivery Model for Each Initiative 41
- Knowing the Risks to the Strategy and Mitigation Tactics 43

5. Conclusion 45
- eHealth Ontario's Strategy Roadmap 2009 - 2012 47
- References 48

Executive Summary

This is the first eHealth Strategy of the new provincial agency, eHealth Ontario. Legally created on September 29, 2008, this new organization has been given the exciting opportunity to take the lead role in harnessing information technology and innovation to improve patient care, safety and access in support of the government's health strategy. eHealth Ontario is responsible for developing a single provincial eHealth Strategy and aligning all publicly-funded eHealth initiatives through a single point of accountability.

Ontario's eHealth Strategy 2009-2012 was developed after an intensive assessment of Ontario's eHealth environment, an extensive review of eHealth initiatives in Ontario and other provinces and countries, a wide-spread consultation process with input from over 400 stakeholders, and deliberations by eHealth Ontario's Board of Directors and senior management.

The eHealth Strategy 2009-2012 is grounded in the vision of the agency: Achieving excellence in healthcare by harnessing the power of information. The Strategy was informed by guiding principles centered on patient focus, tangible clinical impact, clinically relevant solutions, transparency, active engagement of communities and experts, collaboration and partnerships, effective and efficient use of resources, performance improvements, and public accountability.

Core Priorities of the eHealth Strategy 2009-2012

The eHealth Strategy has two intrinsically linked core priorities: clinical and foundational. Within each of these priorities, there are explicit solutions that will be achieved, specific actions and performance targets that will be attained, and measurable results that will be realized by 2012.

Clinical Priorities

Clinical priorities are directly related to patients, health and healthcare. The Strategy will provide significant clinical value to patients and clinicians. To ensure the best chance for success, the Strategy's clinical priorities have a clear and well-defined focus. Over the next three years, eHealth Ontario will focus its efforts on three clinical priorities:

- Diabetes Management: to control and manage diabetes more effectively and reduce associated complications and costs.
- Medication Management: to implement on-line management of prescription medications to minimize preventable adverse drug events.
- Wait Times: to reduce waits in Ontario emergency departments and the incidence of inpatients in acute care waiting for alternate levels of care, and to continue improving wait times for acute care services.

It is recognised that there are many other healthcare priorities beyond these three such as other chronic diseases, and mental health and addictions. The progress made in the three selected clinical areas from 2009-2012 will be used to leverage improvements in other clinical priority areas beyond 2012.

Foundational Priorities

eHealth Ontario will implement information systems that are the foundation to support the Strategy's clinical priorities. In addition to developing a strong infrastructure of key information systems and tools, foundational priorities include improving the technology services that eHealth Ontario manages and strengthening the agency's operating practices and human resource talent. Over the next three years, eHealth Ontario will focus its efforts on four foundational priorities all of which are fundamental for building a comprehensive electronic health record by 2015:

- Cornerstone Information Systems: these systems are building block information tools, services and registries that will enable clinical information to be captured and shared effectively and securely.
- Clinical Activity Information Systems: these systems will help clinicians to manage care at various points along the service continuum.
- Technology Services: eHealth Ontario manages a number of technology services that were assessed, and issues and actions identified.
- Enabling Practices and Talent Management: these will help eHealth Ontario to deliver the eHealth Strategy.

It is critical to keep in mind that the foundational priorities are the foundation that supports achieving the clinical priorities in 2009-2012. These foundational priorities will then be in place and leveraged to support additional clinical priorities beyond 2012.

Executing the Strategy

eHealth Ontario is committed to successfully executing the Strategy and being held accountable for meeting its clinical and foundational priorities on time and on budget. The Strategy identifies ways in which the agency will:

- Leverage and partner with others to execute the Strategy;
- Engage thought and delivery leaders;
- Use the most appropriate delivery model for each initiative; and
- Identify and mitigate the risks to the Strategy. Major risks include insufficient human resources to execute the Strategy, and clinician adoption of eHealth solutions.

In Conclusion

The government of Ontario is investing the political will and the investment capital needed to make this Strategy a success. In May 2008, Cabinet approved the funds to execute the Strategy over four years, from fiscal year 2008-09 through to 2011-12. Since the first of these years is almost finished, this Strategy covers three years from April 1, 2009 to March 31, 2012. The total cost of the Ontario eHealth Strategy over the three years is $2.133 billion.

eHealth Ontario will remain focused and achieve its goals with commitment and conviction. Its true measure of success will be improved health and healthcare for Ontarians. The three clinical priorities will directly impact on the quality of care received by patients and will improve their clinical outcomes. The Strategy's foundational priorities will also improve patient outcomes by supporting the clinical priorities. Patients will start to see clinical benefits in the first year of the Strategy. This focus on early benefits will generate momentum for eHealth in the province and will encourage clinicians and the public to work together to improve healthcare. eHealth Ontario looks forward to being part of this work, and achieving excellence in healthcare by harnessing the power of information for the benefit of Ontarians.

INTRODUCTION

This is the first eHealth Strategy of the new provincial agency, eHealth Ontario. Legally created on September 29, 2008, this new organization has been given the exciting opportunity to take the lead role in harnessing information technology and innovation to improve patient care, safety and access in support of the government's health strategy.

Background

This is the first eHealth Strategy of the new provincial agency, eHealth Ontario. Legally created on September 29, 2008, this new organization has been given the exciting opportunity to take the lead role in harnessing information technology and innovation to improve patient care, safety and access in support of the government's health strategy. eHealth Ontario is responsible for developing a single provincial eHealth Strategy and aligning all publicly-funded eHealth initiatives through a single point of accountability.

This first eHealth Strategy did not begin with a blank slate. Rather, in May 2008, Cabinet approved Ontario's first significant eHealth plan. eHealth Ontario was created to lead the execution of this plan. The new agency was created out of the Smart Systems for Health Agency and the e-Health Program of the Ministry of Health and Long-Term Care. These two organizations have been managing various initiatives to support their own priorities.

Given this environment, it was challenging for eHealth Ontario to create this first Strategy. The agency had to incorporate the important health priorities of the Ministry, assess the priorities and initiatives of the two previous organizations, and bring an innovative and results-oriented approach to the leadership role that it has been given.

Ontario's eHealth Strategy 2009-2012 is the result. The Strategy was developed after an intensive assessment of Ontario's eHealth environment, an extensive review of eHealth initiatives in Ontario and other provinces and countries, a wide-spread consultation process with input from over 400 stakeholders, and deliberations by eHealth Ontario's Board of Directors and senior management.

The Government of Ontario is investing the political will and the investment capital needed to make this Strategy a success. In May 2008, Cabinet approved the funds to execute the Strategy over four years, from fiscal year 2008-09 through to 2011-12. Since the first of these years is almost finished, this Strategy covers three years from April 1, 2009 to March 31, 2012. The total cost of the Ontario eHealth Strategy over the three years is $2.133 billion.

eHealth Ontario is committed to successfully executing the Strategy and being held accountable for meeting its priorities on time and on budget. eHealth Ontario will remain focused and achieve its goals with commitment and conviction. We look forward to working with the public, clinicians and others to make this Strategy a success. eHealth Ontario especially looks forward to improving healthcare and empowering Ontarians to be more engaged in their healthcare through information.

Overview of the Report

Part Two of this report presents the approach that was used to develop Ontario's eHealth Strategy 2009-2012. The approach includes: grounding the eHealth Strategy in the vision, mission and mandate of eHealth Ontario, using principles to guide the development and implementation of the Strategy, learning from the eHealth efforts of others, and engaging stakeholders in developing the Strategy.

Part Three presents the Strategy. It begins with an overview followed a description of the clinical priorities: diabetes management, medication management and wait times and the Strategy's foundational priorities which include cornerstone information systems, clinical activity information systems, technology services, and enabling practices and talent management. This is followed by how the Strategy will benefit Ontarians. Details on executing the Strategy are found in Part Four.

Part Five presents concluding remarks followed by supporting appendices.

APPROACH TO DEVELOPING ONTARIO'S eHEALTH STRATEGY 2009-2012

A comprehensive approach was used to develop Ontario's eHealth Strategy 2009-2012. This approach included:

- Grounding the eHealth Strategy in the vision, mission and mandate of eHealth Ontario;
- Using principles to guide the development and implementation of the Strategy;
- Learning from the eHealth efforts of others; and
- Engaging stakeholders in developing the Strategy.

Grounding the eHealth Strategy in the vision, mission and mandate of eHealth Ontario

The eHealth Strategy supports the vision, mission and mandate of eHealth Ontario.

Vision

The vision of eHealth Ontario is:

Achieving excellence in healthcare by harnessing the power of information.

Mission

The mission of eHealth Ontario is to:

Deliver a comprehensive, patient-focused, secure and private electronic system that will improve the way patients receive care.

Mandate

The mandate of eHealth Ontario is to:

Play leading role in harnessing IT and innovation to improve patient care, safety and access in support of the government's health strategy.

- Provide a single, harmonized and coherent eHealth Strategy for Ontario that supports the government's health agenda.
- Align all publicly-funded eHealth initiatives through a single point of accountability.
- Encompass all provincially funded healthcare system information initiatives that support clinicians and patient care delivery, and are actually or potentially province-wide in scope.

Using Principles to Guide the Development and Implementation of the Strategy

The principles that were used to guide the development and implementation of the eHealth Strategy include:

eHealth Ontario will focus on enabling clinical outcomes (value) for better patient care, not technology for its own sake

- eHealth Ontario will understand its customers and identify where patient care gaps exist
- eHealth Ontario will, over time, provide patients with the means and the information necessary to participate in the management of their own care in a privacy-protective manner

Early clinical benefits are the key to building and sustaining support for the eHealth Strategy

- Meaningful clinical impact must be demonstrated in the first 18 months of each eHealth initiative

The eHealth Strategy will be transparent

- eHealth Ontario will introduce a new level of transparency, building trust among those funding and deploying eHealth initiatives across the province
- Clarity will be provided on what eHealth Ontario is trying to achieve and how it plans to achieve it
- Roles and accountabilities will be understood by all
- The public will be able to evaluate progress against the Strategy

Advice from experts with a track record of success will be sought

- Seamless ongoing interaction will be created between eHealth Ontario and experts across the province, country and internationally
- People with a track record of successful engagement of clinicians in eHealth initiatives will be sought to take advisory and leadership positions in eHealth Ontario
- Stakeholders across the province will be invited to voice opinions on the strategic direction of eHealth Ontario and offer recommendations for improvement
- Clinical and IT experts will be consulted to provide direction to specific initiatives
- An international expert panel will be engaged to provide feedback and recommendations to eHealth Ontario

Performance metrics and success indicators will be measured and reported publicly

- eHealth Ontario will introduce a framework for tracking eHealth metrics for all health IT activities in Ontario
- Selected indicators will reflect strategic health objectives for the province
- The public will be able to evaluate where improvements have been made and where additional effort is required
- Goals will be expressed in clinically relevant terms

Partnerships will be established to deliver eHealth solutions

- eHealth Ontario will be a catalyst for the provincial eHealth agenda; vendor organizations, Local Health Integration Networks (LHINs), hospitals, and other provider organizations will be engaged to deliver solutions and make recommendations on eHealth advancement
- eHealth Ontario recognizes that not everything must be or is best delivered centrally
- Currently eHealth Ontario has limited delivery capacity and is unlikely to build this rapidly enough to deliver the Strategy on its own
- eHealth Ontario spends less annually than aggregate spending on IT by hospitals (~$600M by hospitals)
- The line between the work required within eHealth Ontario and that within other parts of the healthcare system is an artificial divide; all must work together to deliver solutions of value to clinicians and the public

Deployment models will vary by project

- eHealth Ontario recognizes that there is not one correct way to successfully deliver provincial eHealth solutions
- Methods for delivering eHealth initiatives, such as a provincial or regional deployment model, will vary based on the nature of the project
- Lessons learned from Early Adopter sites will be used to inform the roll out of provincially deployed solutions
- Risk of fragmentation and misalignment will be mitigated by strong oversight, standards and accountability framework

Wherever possible, legacy systems will be leveraged to achieve provincial goals

- eHealth Ontario will prioritize clinician adoption, understanding that perfect integration is not possible
- Clinicians will not log into multiple systems to access or input information about a patient
- If not integrated with local systems, provincial initiatives will have difficulty engaging clinicians
- Stand alone legacy systems with strong clinician loyalty make integrated provincial solutions difficult to deploy
- Hospital systems and physician office Electronic Medical Records (EMRs) will always have more content of interest to physicians than provincial applications

Clinical content of solutions must be relevant and complete

- Valuable clinical content is the key to clinician engagement; functionality is of lesser importance
- Complete databases are more compelling for clinicians to use, as this increases the likelihood of finding useful data on a patient
- Systems and processes that are relevant to the clinical workflow allow clinicians to do their job more efficiently
- Technology must be used to be effective and deliver value

Clinicians will be engaged early and often to ensure project success

- eHealth Ontario will engage clinicians early and consult regularly to gain a deep and profound understanding of clinician needs
- Clinical Expert Panel leadership will be critical to the success of each initiative and the Strategy as a whole
- Clinical users will become knowledgeable partners for delivering solutions
- Clinician engagement is a key metric for measuring the success of the Strategy

Learning from the eHealth Efforts of Others

A great deal can be learned from eHealth initiatives that have occurred in Ontario and in other provinces and countries. These experiences can help identify success factors as well as areas of concern. To inform the development of the eHealth Strategy, seven eHealth initiatives were reviewed.

Ontario Telemedicine Network (OTN)

The Ontario Telemedicine Network (OTN) was begun by clinicians at Toronto's Sunnybrook Hospital who wanted to improve access to healthcare services for Ontarians living in northern and remote areas of the province. In the first few years, the network did not have dedicated ongoing operational funding. Hospitals contributed their own resources to support the program in their communities, and volunteers – including clinicians – worked on projects funded by multiple grants.

Even though the network did not have secure funding or a provincial mandate, clinicians and other team members were highly committed because the service had high clinical value. The network also had sustained leadership which helped ensure that it remained focused.

Today, the OTN is an independent, not-for-profit corporation that manages numerous projects funded by the Government of Ontario, Canada Health Infoway and other sources. More than 2,000 healthcare professionals use OTN to provide over 38,000 remote consultations each year. OTN's programs and services are available in nearly 600 sites across the province.

LESSON LEARNED

Initiatives that demonstrate clinical value will be supported.

Ontario Laboratory Information System (OLIS)

The Ontario Laboratory Information System (OLIS) was created in the 1990s to track the volume and cost of laboratory testing in Ontario. Although OLIS was not designed to enhance patient care or be part of an Electronic Health Record (EHR), its role in these areas was promoted in this decade with the emphasis on electronic health records and Canada Health Infoway funding. OLIS is intended to be a cornerstone of Ontario's EHR.

In April 2006, OLIS began accepting test results from laboratories. OLIS collects a large and growing proportion of test results from hospitals and commercial labs. These results are not available for clinical use. In addition to being the repository for results, OLIS serves as a clearing house by laboratories, hospitals and electronic medical records to exchange information on laboratory test requests and results.

The Smart Systems for Health Agency (which has been integrated into eHealth Ontario) managed the OLIS operation whereas the eHealth Program of the Ministry of Health and Long-Term Care developed the OLIS system. It is estimated that over $80 million has been invested in OLIS (including $19M from Canada Health Infoway). The annual cost to maintain OLIS is $15 million; major infrastructure upgrades are needed.

LESSON LEARNED

Initiatives that do not have clinical adoption as a goal from the very beginning will fail to be adopted by clinicians.

Diagnostic Imaging Repositories (DI/PACS)

Since the 1990s, Ontario hospitals have been investing in digital repositories for diagnostic imaging (e.g., CT and MRI scans, X-rays, ultrasound). These repositories enhance patient care by providing quicker and more reliable access to digital images, and enabling the sharing of images among many providers which helps reduce patient transfers. Repositories also result in cost efficiencies. Film storage and handling costs are less, radiologists can increase their throughput, and images can be read remotely.

In response to the need to develop large volume repositories to store and retrieve digital images, large vendors (Siemens, Philips, Agfa, GE) developed Picture Archiving and Communication Systems (PACS).

By 2000, Ontario hospitals began investing in shared PACS regional image repositories. This enabled hospitals to access images of patients treated at more than one site, and to share capital and operating costs. Groups of Ontario hospitals have voluntarily created regional PACS systems with funding support from the Ministry of Health and Long-Term Care and Canada Health Infoway. Examples of these non-profit corporations – that were established before the Local Health Integration Networks – include Thames Valley, South West Ontario; Pan Northern Ontario; and Hospital Diagnostic Imaging Repository Services (Toronto East Network).

Today, six regional PACS systems – which store millions of images – are being or have been implemented in Ontario. Work is beginning to build an overarching transport layer to allow regional PACS networks to exchange images province-wide.

LESSONS LEARNED

- Organizations and people who directly benefit from an initiative are often the most effective at executing the initiative.
- Initiatives that leverage standards and proven technology are often successful.

Wait Times Information System (WTIS)

In 2004, the Ontario Government focused on improving access to and reducing wait times for selected clinical services in keeping with a Federal, Provincial and Territorial First Ministers of Health agreement. By reducing wait times, Ontario's wait time strategy helped reduce morbidity and patient distress, and increased the efficiency of the healthcare system. The strategy included:

- Developing a clear definition of "wait time";
- Identifying wait time targets by patient priority (which were defined by clinical expert panels);
- Collecting and tracking patient wait times against targets; and
- Increasing capacity in the system with new investments.

Cancer Care Ontario was given the responsibility of developing the Wait Time Information System (WTIS) on behalf of the Ministry. The WTIS was implemented in hospitals in phases depending on each hospital's state of readiness. The goal was to produce meaningful province-wide wait times statistics, as soon as possible.

Although reliable baseline data for wait times did not exist when the strategy first began, quite quickly wait times were being collected, monitored and publicly reported. The information was used to assess performance. Precision and quality assurance standards for wait data and reporting workflow were continuously improved after the WTIS went live. This process of continuous improvement is ongoing.

LESSONS LEARNED

- It is important to demonstrate early results based on comprehensive data sets.
- A continuous improvement cycle should be applied to software, workflow, data quality standards and reporting.

Alberta netCARE

In 2003/04, the Capital Health Region (greater Edmonton area with approximately 1.1 million people) developed an Electronic Health Record strategy and obtained supporting database and portal software. At the same time, the Alberta Government Health and Wellness (AHW) was building a provincial electronic health record portal linked to some provincial databases (e.g., drug information)

Even though the AHW provincial portal had functional and technical merit, clinicians with access to both systems overwhelmingly favoured the Capital Health portal because it included a richer set of patient data. AHW and Capital Health agreed to make the Capital Health netCARE portal available across the province, and link it to the provincial and local databases.

Today, the netCARE portal is used daily by thousands of clinicians. It provides access to demographic data, prescribed/dispensed drugs, known allergies/intolerances, immunizations, laboratory test results, diagnostic imaging reports, the diabetes registry and other medical reports. netCARE interface capabilities are being included in electronic medical record products which are being funded by the provincial government.

LESSON LEARNED

Access to comprehensive and accurate patient information is the principal driver for adopting a clinical system.

UK National Care Records Service (NCRS)

The UK National Care Records Service began during the time when:

- There were national requirements for a fully-integrated electronic health record within hospitals;
- There was a lack of standards preventing true interoperability and communication between care providers; and
- The UK economy had a great deal of money to invest in health information technology.

The UK used a large centralized information project approach:

- The country was divided into five regions with vendors procured for each (known as Local Service Providers or LSPs).
- System functionality was established at a national level through a set of standard requirements.
- IT-enabled change management and benefits projects were initiated along with ambitious timelines.
- A fully-hosted and integrated solution was used.
- A one-model-fits-all approach was developed with little input from clinicians in the design and implementation phases. No clinical input was obtained during the selection phase.

The program – which is not yet complete – had a number of results. Clinicians did not want to abandon their existing systems which were incorporated into hospitals. The large emphasis on data quality and ownership policies in integrated environments made it difficult to migrate data between different care settings. Two local service providers withdrew from the program due to high risks, continuing losses and payment delays. Currently, the program is not achieving implementation targets, and there are even longer delays realizing clinical benefits.

LESSON LEARNED

Projects that are driven by a top-down emphasis on technology development without a clear clinical business case will generate resistance, delays and cost overruns.

Denmark eHealth Portal

Physicians began adopting computers voluntarily in Denmark before government mandated their adoption. By 2000, nearly all Danish healthcare providers were storing and sharing patient information electronically with others included in a patient's circle of care. As a result, Denmark quickly progressed to sharing health information electronically between healthcare professionals and patients.

In 2003, after a national competitive procurement process, work began on developing a portal. Within nine months, the Danish eHealth Portal was launched. By early 2006, 650,000 digital signatures were issued to log into the portal. There are about 175,000 unique patient visits to the portal each month. The information that is available to patients includes:

- E-services (scheduling, prescription renewal etc.);
- Information about prevention and treatment;
- Wait list and mortality statistics from hospitals; and
- Personal medical history (since 1977).

The information that is available to physicians includes:

- Patient appointment calendar;
- Web access to laboratory data (pilot);
- Patient records (drug profiles, medical records etc.); and
- Secure e-mail communication.

Denmark has a multi-function portal that allows patients, their families and healthcare professionals to access information and communicate with one another. (http://www.sundhed.dk/wps/portal/_s.155/1836)

LESSONS LEARNED

- Automation in physician offices can lead to faster adoption of centrally-delivered eHealth initiatives.
- Patients and physicians are highly interested in the content of electronic medical records and in tools that enable interactions with other physicians.

Engaging Stakeholders in Developing the Strategy

A stakeholder engagement process was conducted to inform the development of the eHealth Strategy. The process captured input from a broad range of organizations and individuals:

- Individual meetings were conducted by the CEO of eHealth Ontario.
- Group meetings were held with organizations, associations and committees.
- Written input was obtained on the draft eHealth Strategy. Internal and external stakeholders were invited to comment on the draft document. The majority of respondents provided their input using an open-ended electronic survey. Others provided their input through formal submissions or letters.

In total, 441 people and organizations provided input on the Strategy. Of these, 260 people attended individual or group meetings and 181 people or organizations submitted written comments (26 internal stakeholders and 155 external individuals or organizations).

The input from the consultations was reviewed and modifications were made to the Strategy, where appropriate.

ONTARIO'S eHEALTH STRATEGY 2009-2012

Overview of the Strategy

eHealth Ontario's vision – Achieving excellence in Healthcare by Harnessing the Power of Information – reflects the two intrinsically linked core priorities of Ontario's eHealth Strategy 2009-2012:

- Clinical priorities which are directly related to patients, health and healthcare; and
- Foundational priorities which develop, leverage and support information systems.

Clinical Priorities

For excellence in healthcare, the Strategy must provide significant clinical value to patients and clinicians. To ensure the best chance for success, the Strategy's clinical priorities need to have a clear and well-defined focus.

Over the next three years, eHealth Ontario will focus its efforts on three health priorities:

- Diabetes Management
- Medication Management
- Wait Times

Harnessing information in these areas will lead to excellent healthcare, provide tangible returns on investment, and will build on successes and lessons learned in Ontario and other jurisdictions. It is recognised that there are many other healthcare priorities beyond these three such as other chronic diseases, and mental health and addictions. The progress made in the three clinical areas from 2009-2012 will be used to leverage improvements in other clinical priority areas in the future.

Foundational Priorities

When the Minister of Health and Long-Term Care, David Caplan, announced the creation of eHealth Ontario, he noted that the agency "will deliver a comprehensive, patient-focused, secure and private electronic system that will improve the way patients receive care." To achieve this, eHealth Ontario is expected to "encompass all healthcare system information system initiatives that are provincially funded, support clinicians and the delivery of patient care, and are currently or potentially province-wide in scope."

This is a major undertaking that involves harnessing many information systems that are the foundation which supports the Strategy's clinical priorities. These information systems include cornerstone systems that will enable clinical information to be captured and shared effectively and securely, as well as systems that will help clinicians to manage care at various points along the service continuum (i.e., health promotion, primary care, acute care, rehabilitation, long-term care, home care, etc.). In addition to creating a strong infrastructure of key information systems and tools, the foundation also includes the technology services that eHealth Ontario manages and the agency's operating practices and human resource talent.

Over the next three years eHealth Ontario will focus its efforts on the following foundational priorities:

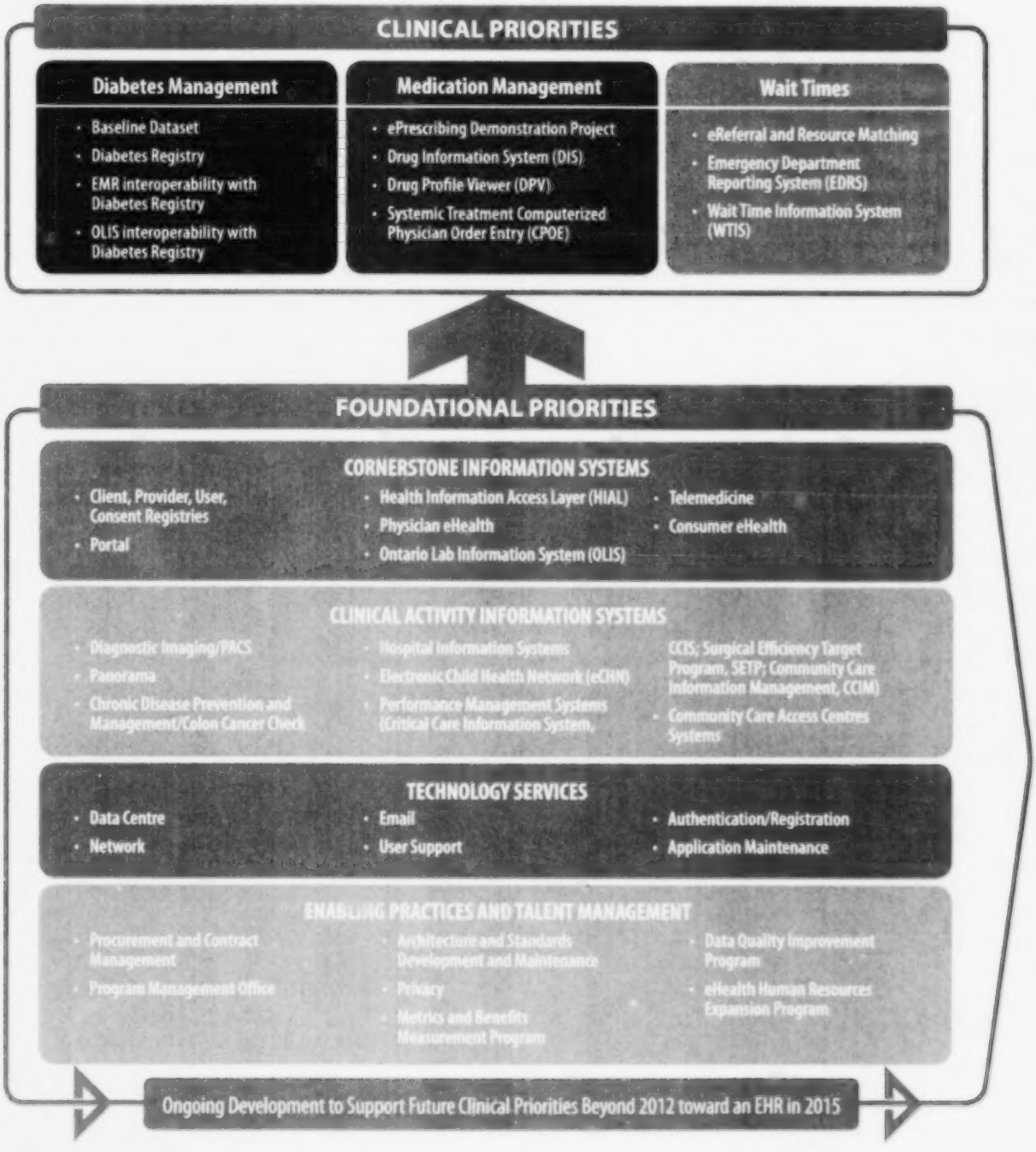
- Cornerstone Information Systems
- Clinical Activity Information Systems
- Technology Services
- Enabling Practices and Talent Management

It is critical to keep in mind that the foundational priorities are precisely that: they are the foundation that supports achieving clinical priorities in 2009-2012. In addition to supporting future clinical priorities beyond 2012, the four foundational priorities are fundamental for building a comprehensive electronic health record by 2015.

The Ontario eHealth Strategy 2009-2012

The eHealth Strategy includes clinical and foundational priorities, and identifies solutions that will be achieved from 2009 to 2012 (Figure 1). The following sections present more detailed information on the priorities along with the explicit solutions that will be achieved, the specific actions and performance targets that will be attained, and the measurable results that will be realized by 2012.

Figure 1: The Ontario eHeath Strategy 2009-2012, Priorities and Solution



The Ontario eHealth Strategy 2009-2012

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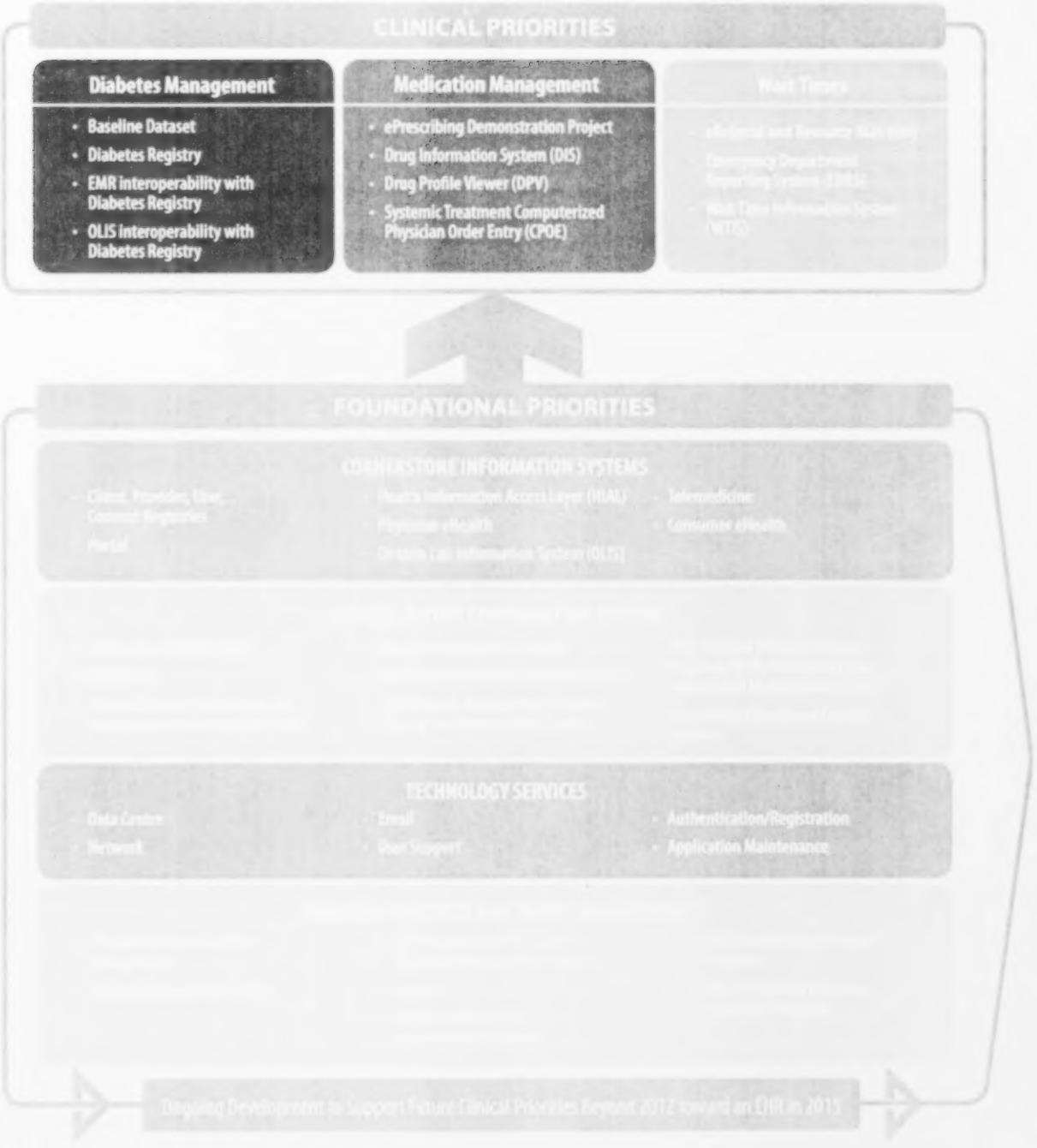
Figure 1: The Ontario eHealth Strategy 2009-2012, Priorities and Solution



Clinical Priorities

This section presents the three clinical priorities of the Ontario eHealth Strategy 2009-2012:

- Diabetes Management
- Medication Management
- Wait Times

Each section presents background information followed by detailed information on the solutions, actions, performance indicators and targets for each clinical priority in 2009-2012.

Diabetes Management

Background

Diabetes mellitus (diabetes) is a chronic or ongoing disease that occurs when the body cannot produce and/or use insulin. This leads to high levels of glucose (sugar) in the blood. People living with diabetes cannot effectively use glucose to fuel their cells. If diabetes is not managed and high levels of glucose remain over long periods of time, diabetes can lead to other illnesses. When combined with high blood pressure, high cholesterol and smoking, diabetes causes damage to large and small blood vessels in many organs resulting in heart attacks, stroke, amputations, blindness, kidney failure and death.

In Ontario approximately 900,000 people live with diabetes. Each year:

- 350 of these people will go blind,
- 1,100 will have a limb amputated,
- 2,300 will have a heart attack, and
- 3,200 will die.

Each year in Ontario, 23,000 people will discover they have diabetes. People with diabetes account for a high number of hospital emergency department visits. Each year, 165,000 people visit the emergency department due to diabetes compared to 72,000 visits due to asthma, 66,000 visits due to chronic obstructive pulmonary disease, and 26,000 visits due to congestive heart failure.

Alarmingly, the number of people in Ontario with diabetes has increased 69% over the last 10 years.

The impact of diabetes is dramatic but it can be controlled. In fact, many of the 900,000 Ontarians who have diabetes suffer with preventable complications. To manage diabetes, it is important to control one's blood pressure, cholesterol and blood sugar with a healthy diet, exercise, appropriate medications and no smoking. Keeping one's blood pressure, cholesterol and blood sugar in normal ranges helps protect against vascular complications and decreases morbidity and premature mortality.

Common laboratory tests and simple procedures can be used to monitor the health of those with diabetes. Tests include measuring cholesterol levels and a blood sugar test called HbA1c; procedures include blood pressure monitoring and retinal eye examinations.

Effectively managing diabetes will improve the quality of life for Ontarians with this disease, reduce their mortality and morbidity rates, and decrease the cost of this disease to the healthcare system.

In July 2008, the Ministry of Health and Long-Term Care launched the Ontario Diabetes Management Strategy under the guidance of the Diabetes Expert Panel. This strategy will help prevent, manage and treat diabetes, and enable better self-care by providing people with access to information, education and tools. The strategy aims to help prevent – each year – 88 people from going blind; prevent 322 heart attacks, 473 lower limbs from being amputated and 448 deaths (assuming HbA1c level is reduced by 1% for all people with diabetes); and prevent $300 million in hospital costs.

Diabetes Management as a Clinical Priority

Ontario's eHealth Strategy 2009-2012 has identified diabetes management as one of its clinical priorities. Four solutions will be developed:

- Baseline Diabetes Dataset Initiative
- Diabetes Registry
- EMR interoperability with Diabetes Registry
- OLIS interoperability with Diabetes Registry

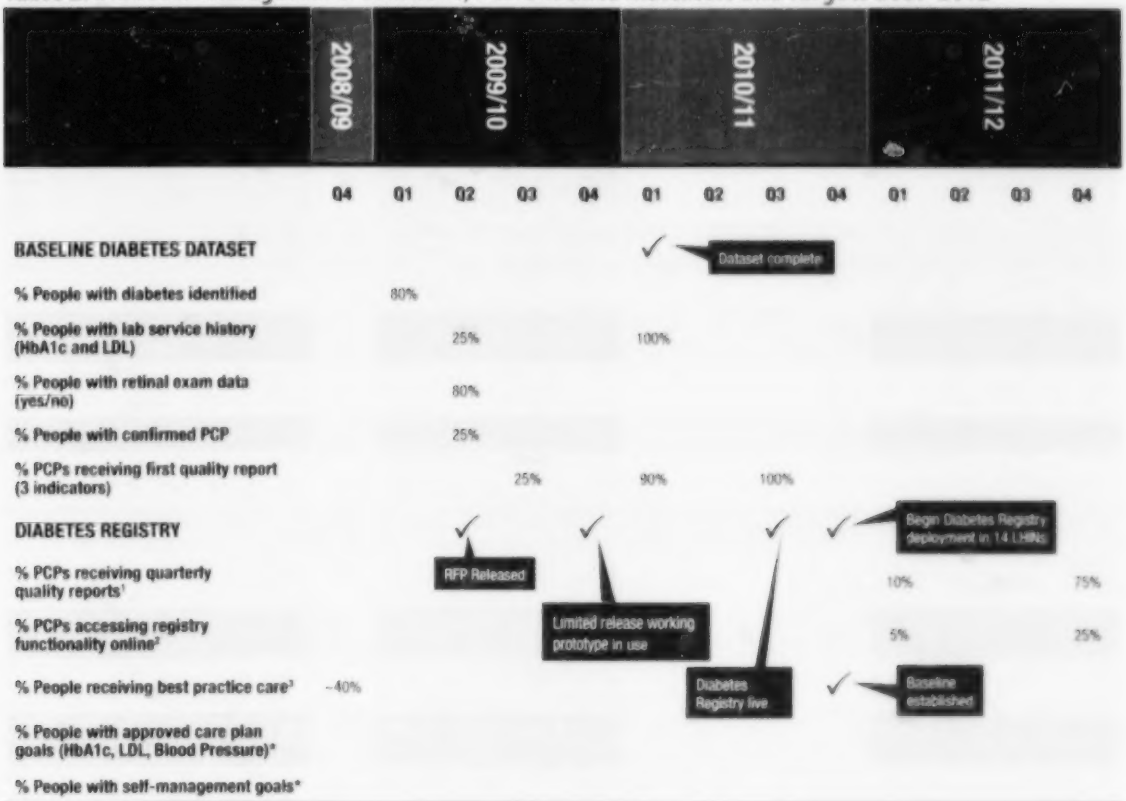
Diabetes is one of several chronic diseases with a major impact on both the health of Ontarians and the burden placed on the healthcare system. As we focus on Diabetes Management in the 2009-2012 period, we will establish procedures and implement automated solutions that can later be modified to apply to other chronic diseases.

Detailed information on the four Diabetes Management solutions including actions, performance indicators and targets for 2009-2012 are presented in Table 1 and 2.

Table 1: Diabetes Management: Solutions and Actions 2009-2012

Solution	The Solution Will ...	Actions in 2009-2012 to Achieve the Solution
Baseline Diabetes Dataset Initiative	▸ Identify Ontarians with diabetes, match them to their primary care providers and measure the current state of diabetes care in Ontario. ▸ Provide a baseline dataset to populate the provincial Diabetes Registry and accelerate its adoption.	▸ Leverage existing datasets that include patient demographics, Ontario Health Insurance Plan (OHIP) claims information, and clinical data from the Canadian Institute for Health information. ▸ Generate a one time list of patients with diabetes, and validate and match them to their primary care provider. ▸ Provide physicians with reports that support improved management of patients with diabetes (HbA1c, LDL cholesterol, retinal exam). ▸ Provide Local Health Integration Networks (LHINs) and Government with reports that support population-based planning for diabetes services, care models, and the planning and allocation of resources.
Diabetes Registry	▸ Manage the disease by monitoring whether patients receive evidence- based interventions. ▸ Electronically monitor adherence to best practices for patients with diabetes and provide alerts to physicians when best practices are not being followed. ▸ Measure the baseline level of care and report on care gaps.	▸ Complete procurement of a provincial Diabetes Registry. ▸ Populate the Registry with a baseline dataset. ▸ Integrate the Registry with other systems to update clinical indicators in real-time. ▸ Roll out the Registry starting with LHINs that have been identified as early adopters. ▸ Generate real-time reports for physicians and LHINs ▸ Explore the applicability of the Diabetes Registry to management of data on other chronic diseases.
EMR interoperability with the Diabetes Registry	▸ Enable primary care physicians to exchange data electronically between their point-of-service Electronic Medical Record (EMR) systems and the Diabetes Registry.	▸ Build an EMR requirement to exchange data with the Diabetes Registry in the September 2009 OntarioMD EMR specifications.
OLIS interoperability with the Diabetes Registry	▸ Use the OLIS repository of lab test results as a resource for diabetes decision-making and treatment.	▸ Interface OLIS with the Diabetes Registry to be the source of HbA1c and LDL cholesterol lab test results for patients with diabetes.

Table 2: Diabetes Management: Solutions, Performance Indicators and Targets 2009-2012



1. Quality reports will start with 3 indicators (HbA1c, LDL, retinal exam) and additional indicators will be added as they become available from OLIS and other sources

2. Physicians may access registry functionality through the registry directly, through a portal or through their office EMR

3. Measurement of this indicator is key to measuring the clinical impact of the eHealth Strategy. Currently 40% of people are receiving best practice care based on 4 services - HbA1c, foot exam, retinal exam and LDL (Source: Schoen et al. "Taking the pulse of health care systems: experiences of patients with health problems in six countries." Health Affairs, Nov 3, 2005). The baseline for Ontario will be established in Q4 2010/11 and targets will be set thereafter.

* Targets to be determined

Medication Management

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Background

The fourth leading cause of death in Ontario is preventable adverse drug events. These events occur for a number of reasons. Physicians may not be aware of other medications their patients are taking and may prescribe a drug that is contraindicated. This is especially a concern for people who take multiple medications. Physicians may also not monitor drug allergies in their patients, or may prescribe the wrong drug or the wrong dose. Pharmacists – who play an important role in primary care for many Ontarians – are left with insufficient or unclear information to support the most effective outcome for their clients. Finally, since most prescriptions in Ontario are hand-written, a pharmacist who gets an illegible prescription may try to decipher what is being prescribed on his or her own with negative outcomes.

This year in Ontario, there will be 394,000 preventable adverse drug events resulting in:

- 240,000 physician office visits,
- 36,000 hospitalizations, and
- 4,000 deaths.

Implementing on-line management of prescription medications – using solutions such as electronic prescribing, drug information systems, a drug profile viewer and computerized physician order entry systems – will help prevent a significant number of adverse drug events. (For example, it has been shown that computerized physician order entry systems reduce medication error and, thereby, improve patient safety.) The solutions will result in:

- Comprehensive medication profiles for Ontarians;
- Checks for allergy interactions;
- Checks for drug-to-drug interactions;
- Checks for drug-to-diagnosis interactions;
- Legible prescriptions for pharmacists to read;
- Accurate dosing of medications; and
- Improved management of complex therapies.

Most importantly, it is expected that these solutions will help prevent – each year – 217,000 adverse drug events, as well as 132,000 physician office visits, 20,000 hospitalizations and 2,200 deaths due to these adverse events. These solutions will also prevent $350 million in healthcare costs due to these events.

Medication Management as a Clinical Priority

Ontario's eHealth Strategy 2009-2012 supports medical management as one of its clinical priorities. Four solutions will be developed and/or extended. (The solutions that will leverage and extend current successful medication management efforts are noted with an asterisk.):

- ePrescribing Demonstration Project
- Drug Information System (DIS)
- Drug Profile Viewer (DPV) *
- Systemic Treatment Computerized Physician Order Entry (CPOE) *

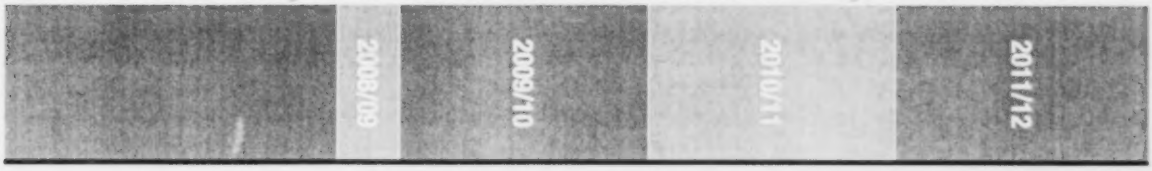
Detailed information on these solutions including actions, performance indicators and targets for 2009-2012 are presented in Tables 3 and 4.

Table 3: Medication Management: Solutions and Actions 2009-2012

Solution	The Solution Will ...	Actions in 2009-2012 to Achieve the Solution
ePrescribing Demonstration Project	▸ Provide pharmacists with access to Electronic Medical Records (EMRs) to view pending prescriptions and a subset of clinically-relevant information. ▸ Validate key electronic prescribing outcomes in a local setting to develop tools and templates that will be used to inform the roll out of provincial ePrescribing.	▸ Implement ePrescribing by extending access to EMR to local pharmacies in two demonstration project sites by March 31, 2009 (Georgian Bay Family Health Team, Group Health Centre, Sault St. Marie). These projects are underway. ▸ Leverage the lessons learned about implementing the provincial Drug Information System (DIS).
Drug Information System (DIS)	▸ Provide clinicians with a comprehensive medication profile of all Ontario residents and their pending prescriptions. ▸ Implement clinical decision-making tools to ensure that prescribing is in accordance with evidence-based guidelines and to flag adverse drug interactions at the time of ordering. ▸ Provide patients and their families with their medication history as well as the ability to record and track medical data such as blood sugar readings.	▸ Procure and implement a provincial DIS that includes a comprehensive drug history, drug utilization review tools (decision support) and e-prescribing. ▸ Create a comprehensive medication record for all Ontarians by tracking all pharmacy dispensing transactions. ▸ Give clinicians access to patients' drug profiles and prescribing guidelines when ordering prescriptions. ▸ Enable patients to submit a request for refills online, receive automated adherence alerts and find reliable drug information.
Drug Profile Viewer (DPV) *	▸ Provide electronically prescription drug claims information for Ontario Drug Benefit recipients to clinicians.	▸ This solution is currently available in Emergency Rooms (ER) in Ontario. Access will be expanded beyond ERs to hospital and community-based clinicians. ▸ Explore expanding the DPV to include non-Ontario Drug Benefit recipients. (Note: The Drug Profile Viewer will be used until the Drug Information System becomes available.)
Systemic Treatment Computerized Physician Order Entry (CPOE) *	▸ Provide oncology clinicians with chemotherapy order entry and clinical decision support at the point of care.	▸ Expand the roll out of Systemic Treatment CPOE across Ontario.

*Solutions that will leverage and extend current successful medication management efforts.

Table 4: Medication Management: Solutions, Performance Indicators and Targets 2009-2012



	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ePRESCRIBING & DRUG INFORMATION SYSTEM	✓	ePrescribing Demonstration Project implemented at two local pilots					✓ DIS procured		✓ DIS limited roll-out (pilot) complete	✓			DIS full roll-out begins
% Community pharmacies submitting dispensing events to DIS										1%			65%
% Physicians in Ontario sending prescribing events to the DIS										1%			35%
% Prescriptions in DIS										5%			75%
SYSTEMIC TREATMENT CPOE													
% Chemotherapy orders ordered electronically	65%				65%				70%				75%
% Hospital beds using CPOE*													
% Reduction in adverse events*													

* Targets to be determined

Table 4: Medication Management: Solutions, Performance Indicators and Targets 2009-2012

	2008/09	2009/10				2010/11				2011/12			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ePRESCRIBING & DRUG INFORMATION SYSTEM	✓	ePrescribing Demonstration Project implemented at two local pilots					✓ DIS procured		✓ DIS limited roll-out (pilot) complete	✓			DIS full roll-out begins
% Community pharmacies submitting dispensing events to DIS										1%			65%
% Physicians in Ontario sending prescribing events to the DIS										1%			35%
% Prescriptions in DIS										5%			75%
SYSTEMIC TREATMENT CPOE													
% Chemotherapy orders ordered electronically	65%				65%				70%				75%
% Hospital beds using CPOE*													
% Reduction in adverse events*													

* Targets to be determined

Wait Times

Background

In November 2004, the Ministry of Health and Long-Term Care launched the Ontario Wait Time Strategy to improve access and reduce wait times for clinical services. In October 2007, the government announced that the strategy was being expanded to include emergency room wait times.

Nearly 50% of Emergency Room (ER) visits are made by patients with non-urgent or less urgent care needs. About 90% of ER patients are treated within 9.4 hours from when they are triaged/registered to the time they leave the ER; the average wait time is 7.3 hours. ER wait times are five times longer for patients who need to be admitted to hospital (about 35 hours; about 75% of the total time that these patients wait in the ER is spent waiting for an inpatient bed).

A major factor causing long ER wait times is the high number of alternative level of care (ALC) patients who remain in acute care when they should be receiving more appropriate care elsewhere (e.g., home, rehabilitation hospital, complex continuing care hospital, long-term care facility, etc.). High numbers of ALC patients make it difficult to admit patients from the ER to hospital.

Reducing ER wait times and improving access to alternative levels of care will result in better patient care and increased patient satisfaction. It will also help improve:

- The ability of ERs to treat patients with the most urgent care needs more quickly.
- The wait time between being designated ALC to when someone is discharged from acute care.
- Access to community services so patients can Remain at home and/or be discharged directly home.

Wait Times as a Clinical Priority

Ontario's eHealth Strategy 2009-2012 supports wait times as one of its clinical priorities. In particular, this priority will focus on those areas where the greatest results can be achieved: ER length of stay for admitted patients and the wait time from acute care to post-acute care.

Three solutions will be developed and/or extended:

- eReferral and Resource Matching
- Wait Time Information System (WTIS)*
- Emergency Department Reporting System (EDRS)*

Detailed information on these solutions including actions, performance indicators and targets for 2009-2012 are presented in Tables 5 and 6.

* Solutions that will leverage and extend current successful wait time efforts

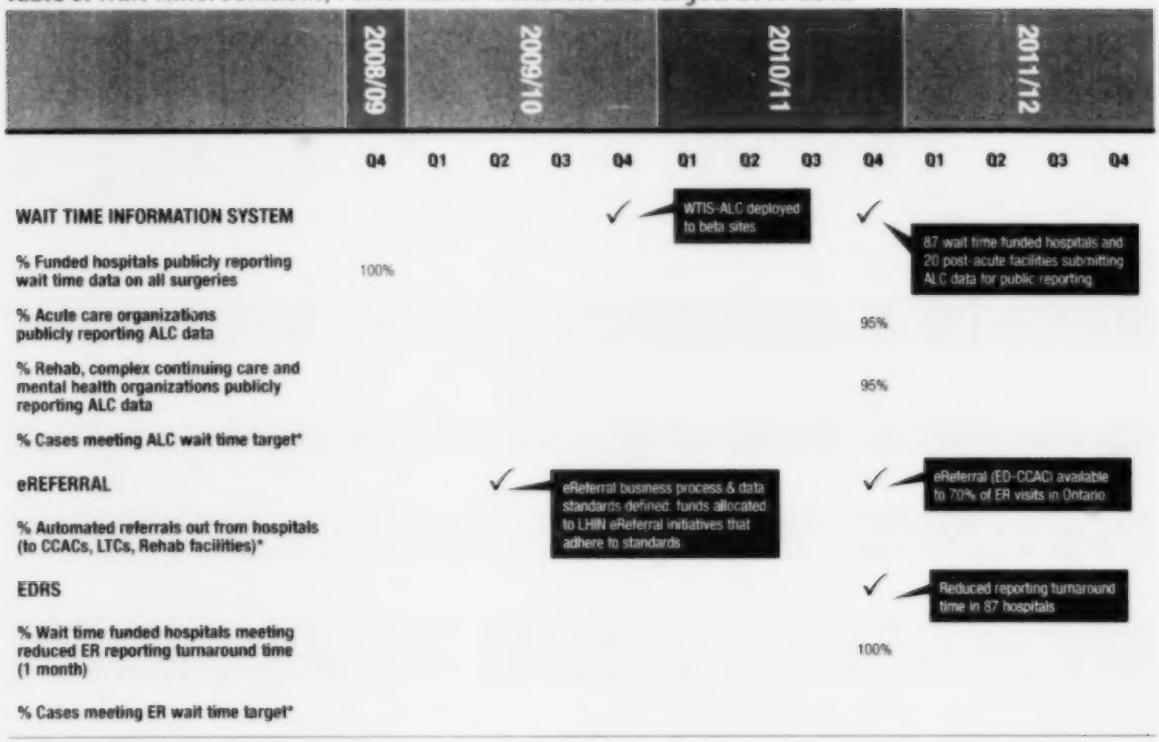
Table 5: Wait Time Solutions and Actions 2009-2012

Solution	The Solution Will ...	Actions in 2009-2012 to Achieve the Solution
eReferral and Resource Matching	▸ Improve/expedite patient referrals out of acute care when the patient no longer needs acute care and should be in a more appropriate care environment. ▸ Divert emergency room (ER) visits when care in the community is more appropriate and effective for the patient.	▸ Undertake a comprehensive consultation to develop a provincial reference model for eReferral. Currently, Local Health Integration Networks (LHINs) are taking different approaches to planning and implementing eReferral solutions to meet their local needs. ▸ Fund initiatives across Ontario that are consistent with the provincial reference model. These initiatives will include new and existing LHIN initiatives. ▸ Expand the Toronto Central LHIN Emergency Department/Community Care Access Centres Notification System to high volume ERs across the province to automate patient referrals from the ER to CCAC case managers.
Wait Time Information System (WTIS)*	▸ Provide detailed information about waits for post-acute care through the WTIS (i.e., Alternate Level of Care wait times). ▸ Provide access to timely and accurate surgical wait times information through the WTIS (ongoing).	▸ 100% of wait time funded hospitals will be submitting wait time data for all surgeries by April 2009 [1]. ▸ Expand the provincial WTIS to capture near real-time Alternate Level of Care wait time data in acute care and post-acute care settings.
Emergency Department Reporting System (EDRS)*	▸ Capture information on hospital ER length of stay, ambulance offload time, time to physician assessment in the ER, time to disposition decision and time to hospital admission (ongoing). ▸ Enable public reporting, performance management and incentive-based funding (ongoing).	▸ Enhance the provincial EDRS which currently collects ER data in 87 hospitals in Ontario to: i) reduce ER data reporting turnaround to one month; and ii) enable linkages with other data sets to track health system performance.

[1] All surgeries include surgeries performed in a fully equipped operating room for the following surgical specialties: Oncology, Orthopaedic Surgery, Ophthalmic Surgery, General Surgery, Plastic Surgery, Neurosurgery, Vascular Surgery, Thoracic Surgery, Otolaryngic Surgery, Dental/Oral Surgery, Urologic Surgery, Gynaecologic Surgery and Paediatric Surgery.

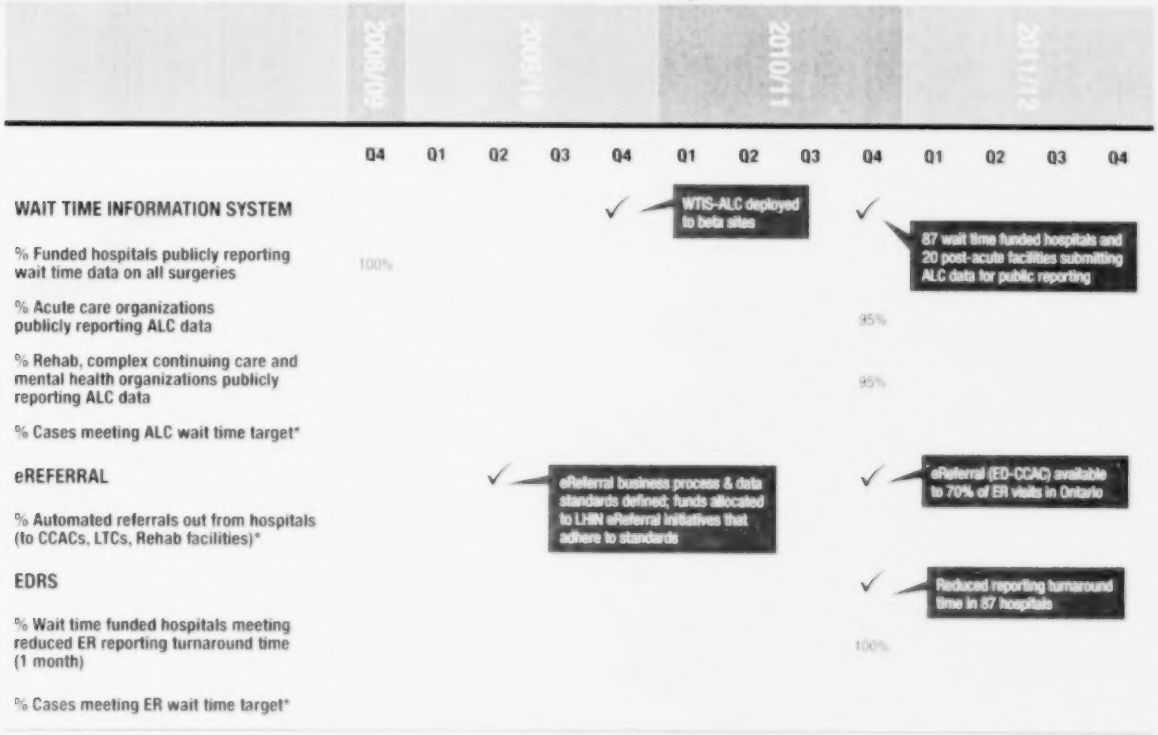
* Solutions that will leverage and extend current successful wait time efforts.

Table 6: Wait Time: Solutions, Performance Indicators and Targets 2009-2012


2008/09
2009/10
2010/11
2011/12
Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
WAIT TIME INFORMATION SYSTEM
WTIS-ALC deployed to beta sites
87 wait time funded hospitals and 20 post-acute facilities submitting ALC data for public reporting
% Funded hospitals publicly reporting wait time data on all surgeries
100%
% Acute care organizations publicly reporting ALC data
95%
% Rehab, complex continuing care and mental health organizations publicly reporting ALC data
95%
% Cases meeting ALC wait time target*
eREFERRAL
eReferral business process & data standards defined; funds allocated to LHIN eReferral initiatives that adhere to standards
eReferral (ED-CCAC) available to 70% of ER visits in Ontario
% Automated referrals out from hospitals (to CCACs, LTCs, Rehab facilities)*
EDRS
Reduced reporting turnaround time in 87 hospitals
% Wait time funded hospitals meeting reduced ER reporting turnaround time (1 month)
100%
% Cases meeting ER wait time target*

* Targets to be determined

Table 6: Wait Time: Solutions, Performance Indicators and Targets 2009-2012


2008/09
2009/10
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Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
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Reduced reporting turnaround time in 87 hospitals
% Wait time funded hospitals meeting reduced ER reporting turnaround time (1 month)
100%
% Cases meeting ER wait time target*

* Targets to be determined

Foundational Priorities

This section presents the four foundational priorities of the Ontario eHealth Strategy for 2009-2012:

- Cornerstone Information Systems
- Clinical Activity Information Systems
- Technology Services
- Enabling Practices and Talent Management

Cornerstone Information Systems

Cornerstone Information Systems support the clinical priorities and are fundamental for building a comprehensive Electronic Health Record (EHR). This foundational priority includes seven solutions:

Identity, Access and Privacy Solutions (IAP)

IAP solutions include client, provider and user registries which allow all local and provincial systems to securely identify patients, care providers, and users of information systems. Consent and audit solutions give individuals control over, and let them monitor access to, their personal health information.

Portal

Portals allow authorized users to see a patient's clinical data and enter clinically-relevant information.

Health Information Access Layer (HIAL)

HIAL allows systems to communicate and share patient record information with each other.

Physician eHealth

The Physician eHealth program provides physician offices with Electronic Medical Record systems which is an absolute requirement for eHealth to have clinical impact.

Ontario Lab Information System (OLIS)

OLIS stores laboratory results from hospitals and private laboratories, and feeds these results to the appropriate systems (e.g., Diabetes Registry) and users, through a portal.

Telemedicine

Telemedicine enables clinicians to perform remote consultations using video conferencing and remote monitoring tools. Tele-homecare lets patients upload their data remotely to a disease registry. For example, patients can upload their blood glucose levels to the Diabetes Registry.

Consumer eHealth

Consumer eHealth includes tools and information that directly support patients, their families and healthcare consumers. Consumer eHealth includes personalized health information that is provided directly to patients in an electronic format (e.g., patient portal).

Table 7 and 8 present detailed information on these solutions, including actions, performance indicators and targets for 2009-2012.

Table 7: Cornerstone Information Systems: Solutions and Actions 2009-2012

Solution	Actions in 2009-2012 to Achieve the Solution
Identity, Access and Privacy Solutions (IAP)	▸ Complete the deployment of client, provider and user registries to ensure identity and access management in the Clinical Priorities (diabetes management, drug information system and the Emergency Room/Alternate Level of Care initiatives.) ▸ Develop a comprehensive provincial strategy for managing consent and implementing and enforcing consent directives for all eHealth solutions in compliance with the Personal Health Information Protection Act (PHIPA). This approach will build on lessons learned from previous projects.

Solution	Actions in 2009-2012 to Achieve the Solution
Portals	▸ Develop provincial standards for portals. ▸ Engage a team to develop a portal/desktop strategy to allow clinicians to access diabetes and medication data. ▸ Convene and engage user groups to identify the preferred delivery methods for presenting data to clinicians. ▸ Reduce the number of physician desktop user interfaces over time.
Health Information Access Layer (HIAL)	▸ Develop a standard HIAL architecture to increase the ability to share information in a standard and secure way across the province (e.g., enable the Ontario Lab Information System (OLIS) to transmit HbA1c and LDL results to the Diabetes Registry; allow drug orders from physician electronic medical records to feed into the Drug Information System). ▸ Continue support for the Greater Toronto Area HIAL project which includes completing requirements, developing definitions and implementing. ▸ Produce a comprehensive Ontario HIAL plan that specifies the number, location and custodianship of HIALS in the province. ▸ Launch other regional and provincial HIAL initiatives that adhere to provincial and pan-Canadian standards.
Physician eHealth	▸ Complete a current state assessment of the adoption of the electronic medical record in primary care to determine the extent to which installed systems are being optimized and used to improve outcomes. ▸ Contract with OntarioMD and direct funding to achieve 65% adoption of electronic medical records in primary care by 2012. ▸ Integrate electronic medical records with provincial systems to provide physicians access to the Diabetes Registry and patient medication profiles. ▸ Work with OntarioMD and clinical advisors to ensure that CMS 3.0 and subsequent specifications align with functional and interoperability requirements for diabetes and medication management. ▸ Announce revised set of incentives and product specifications by the end of 2009.
Ontario Lab Information System (OLIS)	▸ Expedite the deployment of OLIS. ▸ Focus on collecting 100% of lab results in OLIS across the province (currently capturing 30% of lab results) to decrease gaps in patient information and improve service delivery. ▸ Connect OLIS to the Diabetes Registry and provide diabetes lab results to registry users (HbA1c and LDL). ▸ Implement a strategy to allow clinicians access to laboratory data through a variety of clinical desktops (e.g., OLIS clinical viewer, electronic Child Health Network, physician electronic medical records). ▸ Align the consent management capabilities with relevant privacy and consent requirements.

Solution	Actions in 2009-2012 to Achieve the Solution
Telemedicine	▸ Continue telemedicine projects under the Ontario Telemedicine Network to increase access to specialist services across the province. ▸ Expand services that reduce the time, costs and risks associated with travel for patients and their families. ▸ Continue and expand the Ontario Telemedicine Network's diabetes initiatives (tele-ophthalmology project and tele-homecare solutions).
Consumer eHealth	▸ Provide patients with access to their medication profile, personal diabetes data, relevant disease information, navigation/communication tools and publicly reported wait times. ▸ Develop an approach to allow patients to manage and control their personal health information. ▸ Actively engage multi-sectoral leadership to create a concerted approach to consumer eHealth and assess the numerous initiatives currently underway. (Note: There is a strong movement towards consumer eHealth, but no clear technology standard has emerged in the industry.)

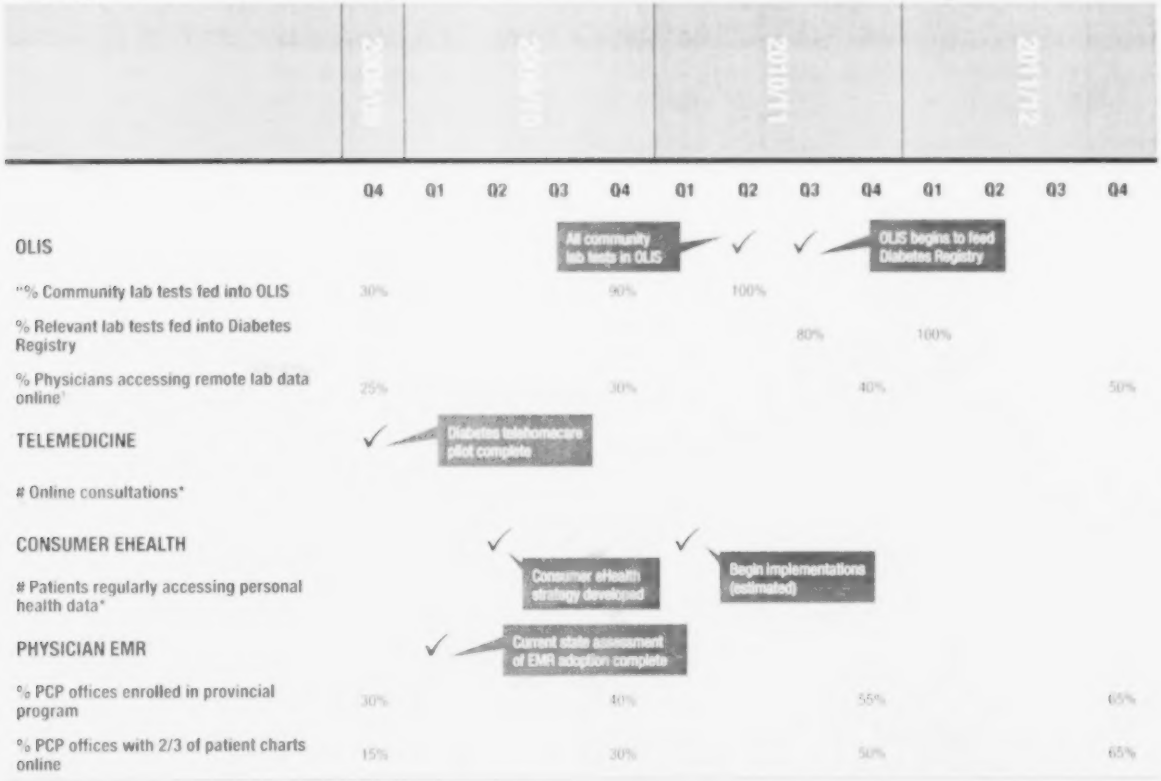
Table 8: Cornerstone Information Systems: Solutions, Performance Indicators and Targets 2009-2012

	2008/09	2009/10				2010/11				2011/12			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
OLIS				All community lab tests in OLIS			✓	✓	OLIS begins to feed Diabetes Registry				
***% Community lab tests fed into OLIS**	30%				90%		100%						
% Relevant lab tests fed into Diabetes Registry								80%		100%			
% Physicians accessing remote lab data online[1]	25%				30%				40%				50%
TELEMEDICINE	✓	Diabetes telehomecare pilot complete											
# Online consultations*													
CONSUMER EHEALTH			✓				✓						
# Patients regularly accessing personal health data*				Consumer eHealth strategy developed				Begin implementations (estimated)					
PHYSICIAN EMR		✓	Current state assessment of EMR adoption complete										
% PCP offices enrolled in provincial program	30%				40%				55%				65%
% PCP offices with 2/3 of patient charts online	15%				30%				50%				65%

[1] This is online data from any source, not just OLIS. The baseline 25% is from the national physician survey. OLIS access will contribute to increasing this number.
* Targets to be determined

Solution	Actions in 2009-2012 to Achieve the Solution
Telemedicine	▸ Continue telemedicine projects under the Ontario Telemedicine Network to increase access to specialist services across the province. ▸ Expand services that reduce the time, costs and risks associated with travel for patients and their families. ▸ Continue and expand the Ontario Telemedicine Network's diabetes initiatives (tele-ophthalmology project and tele-homecare solutions).
Consumer eHealth	▸ Provide patients with access to their medication profile, personal diabetes data, relevant disease information, navigation/communication tools and publicly reported wait times. ▸ Develop an approach to allow patients to manage and control their personal health information. ▸ Actively engage multi-sectoral leadership to create a concerted approach to consumer eHealth and assess the numerous initiatives currently underway. (Note: There is a strong movement towards consumer eHealth, but no clear technology standard has emerged in the industry.)

Table 8: Cornerstone Information Systems: Solutions, Performance Indicators and Targets 2009-2012



† This is online data from any source, not just OLIS. The baseline 25% is from the national physician survey. OLIS access will contribute to increasing this number.
* Targets to be determined.

Clinical Activity Information Systems

Clinical Activity Information Systems will support the clinical priorities. These systems help to track clinical activities at various points along the continuum of care (i.e., health promotion and disease prevention, primary care, diagnostic imaging, acute care, rehabilitation, long-term care, home care, etc.). This foundational priority includes seven solutions:

Diagnostic Imaging/Picture Archiving and Communication System (DI/PACS) and Province-wide Diagnostic Imaging Exchange

The Digital Imaging/Picture Archiving and Communication System (DI/PACS) allows diagnostic images to be stored digitally and shared among clinicians.

Panorama

Panorama tracks and manages immunizations and vaccinations, and the incidence of communicable diseases.

Chronic Disease Prevention and Management/ Colon Cancer Check

The Chronic Disease Prevention and Management screening program focuses on preventing and early detection of colon cancer.

Hospital Information Systems (HIS)

Hospital Information Systems are comprehensive systems that are designed to manage the administrative, financial and clinical operations of a hospital.

electronic Child Health Network (eCHN)

The electronic Child Health Network provides a record of medical visits for paediatric patients including medical records from various healthcare organizations such as hospitals and physician offices.

Performance Management Systems (Critical Care Information System, Surgical Efficiency Target Program, Community Care Information Management)

The Critical Care Information System (CCIS) collects data from hospital critical care across the province. The data assesses the availability and utilization of critical care beds.

The Surgical Efficiency Targets Program (SETP) uses monthly data to monitor the efficiency of hospital operating rooms in Ontario. This evidence is used to recommend improvements.

Community Care Information Management (CCIM) provides community care solutions for accessing and reporting timely, standard, secure and comprehensive information.

Community Care Access Centres (CCAC) Systems

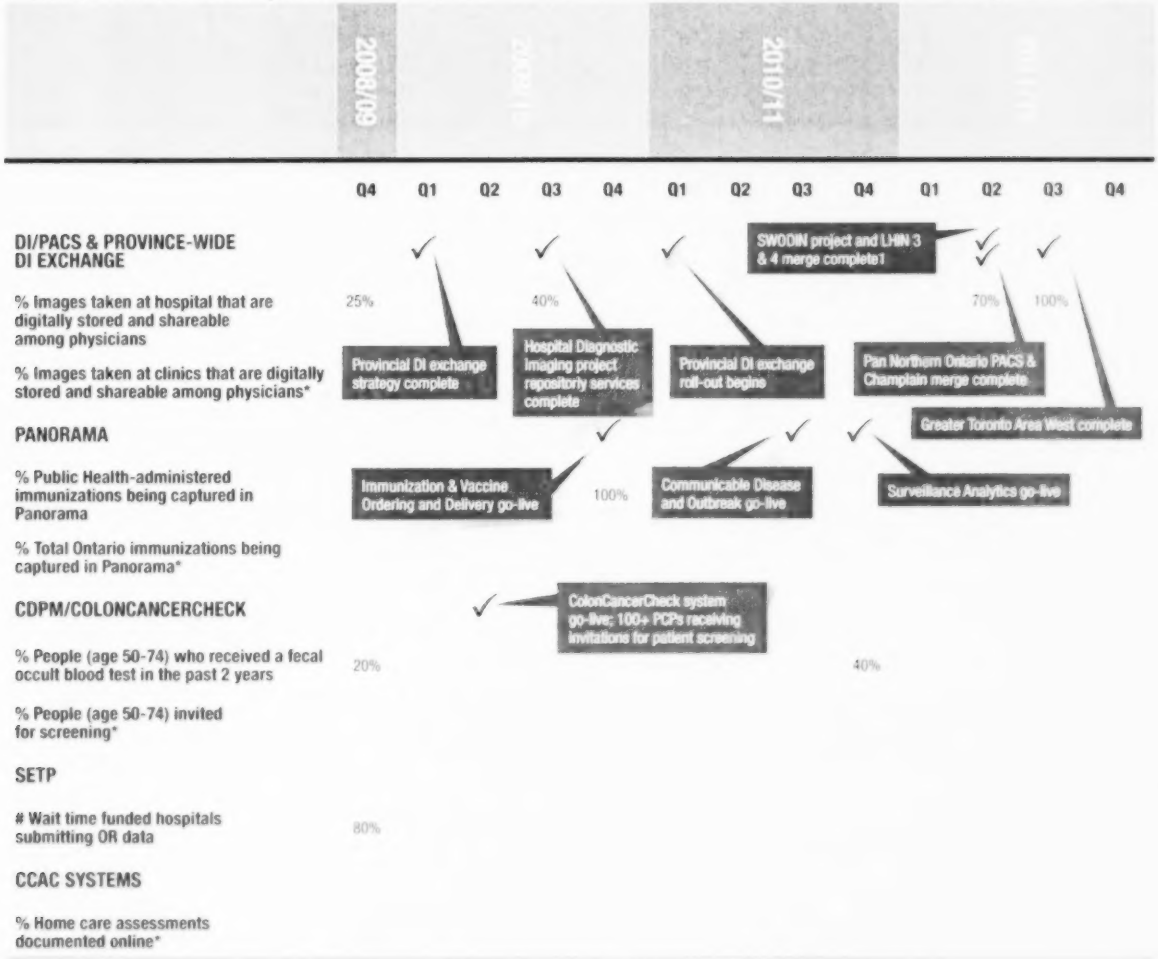
Community Care Access Centres Systems document the case management process from the time a client is first assessed to the time he or she is referred for community services or placement in a long-term care setting.

Tables 9 and 10 present detailed information on these solutions, including actions, performance indicators and targets for 2009-2012.

Table 9: Clinical Activity Information Systems: Solutions and Actions 2009-2012

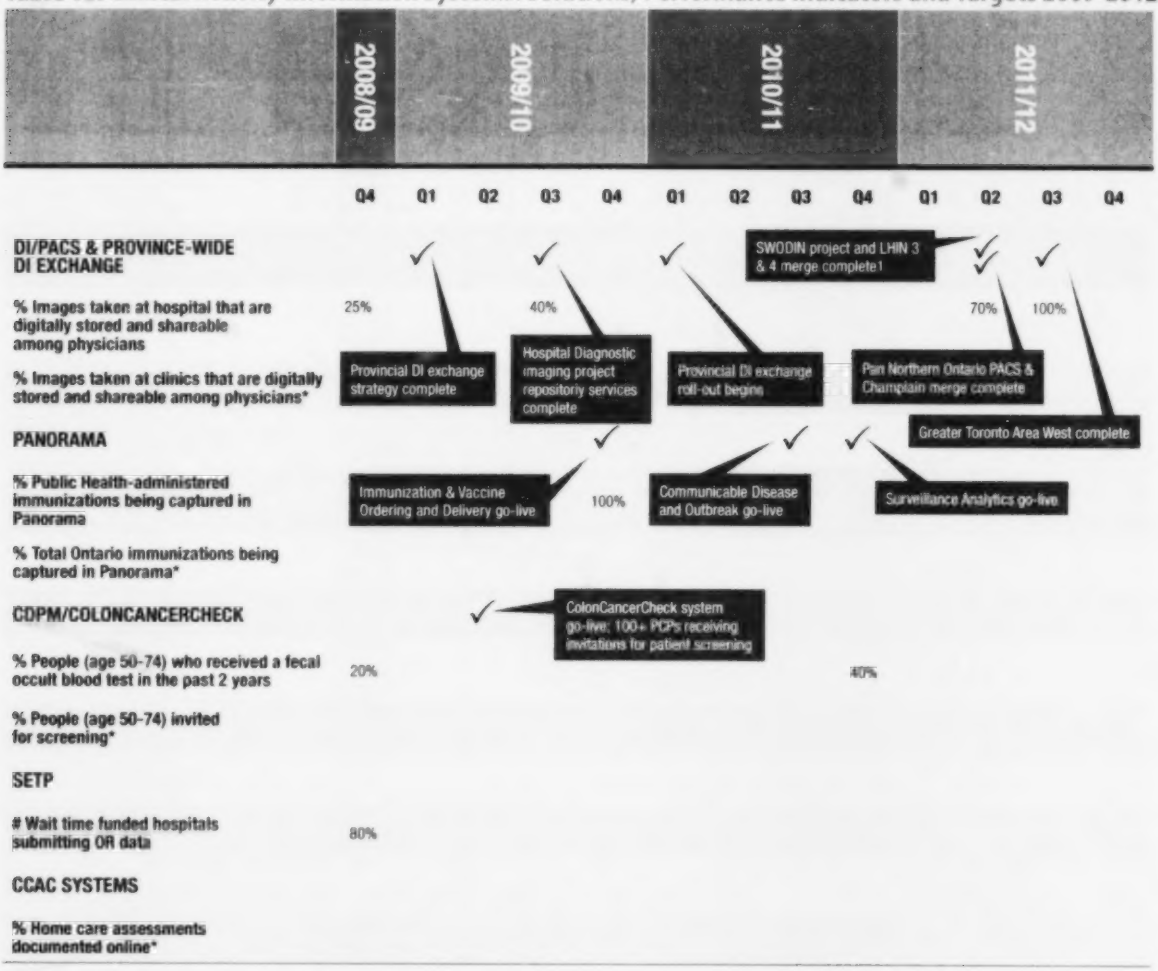
Solution	Actions in 2009-2012 to Achieve the Solution
Diagnostic Imaging/Picture Archiving and Communication System (DI/PACS) and Province-wide Diagnostic Imaging Exchange	▸ Continue regional implementation efforts: six DI/PACS projects and four Diagnostic Imaging Repositories to store and share images from 95% of hospitals across Ontario. ▸ Develop and implement a province-wide diagnostic imaging exchange to ensure interoperability between Diagnostic Imaging Repositories. ▸ Develop a strategy to connect stand-alone diagnostic imaging clinics to Diagnostic Imaging Repositories.
Panorama	▸ Continue implementing Panorama provincially under eHealth Ontario to improve public health surveillance by tracking vaccinations. ▸ By Spring 2010: Immunization and Vaccine Ordering and Delivery go-live. ▸ By December 2010: Communicable Disease and Outbreak go-live. ▸ By Spring 2011: Surveillance Analytics go-live.
Chronic Disease Prevention and Management/Colon Cancer Check	▸ Continue the provincial ColonCancerCheck program under Cancer Care Ontario. ▸ ColonCancerCheck system to go live in September 2009.
Hospital Information Systems (HIS)	▸ Hospitals to continue independent management and implementation of HIS ▸ Work with Local Health Integration Networks, the Ontario Hospital Association and others to incent/encourage movement towards less variation and more standardization and integration of HIS regionally.
electronic Child Health Network (eCHN)	▸ Continue current efforts to improve access to paediatric health information at the point of care. This includes improvements for specialized practice groups, the integration of seven sites in the Niagara Health System, and integration with the Waterloo Wellington Local Health Integration Network. ▸ Assess the profile of eCHN users to determine who is using eCHN, how often, the accessed and the clinical value. ▸ Develop a strategy outlining the future role of eCHN in Ontario.
Performance Management Systems	▸ Continue the Critical Care Information System and the Surgical Efficiency Target Program under the Access to Care program (under Cancer Care Ontario). ▸ Continue Community Care Information Management initiatives.
Community Care Access Centres (CCAC) Systems	▸ Continue implementing and operating CCAC systems.

Table 10: Clinical Activity Information Systems: Solutions, Performance Indicators and Targets 2009-2012


2008/09
2010/11
Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
DI/PACS & PROVINCE-WIDE DI EXCHANGE
% Images taken at hospital that are digitally stored and shareable among physicians
% Images taken at clinics that are digitally stored and shareable among physicians*
25%
40%
70%
100%
Provincial DI exchange strategy complete
Hospital Diagnostic Imaging project repository services complete
Provincial DI exchange roll-out begins
SWODIN project and LHIN 3 & 4 merge complete1
Pan Northern Ontario PACS & Champlain merge complete
Greater Toronto Area West complete
PANORAMA
% Public Health-administered immunizations being captured in Panorama
% Total Ontario immunizations being captured in Panorama*
100%
Immunization & Vaccine Ordering and Delivery go-live
Communicable Disease and Outbreak go-live
Surveillance Analytics go-live
CDPM/COLONCANCERCHECK
% People (age 50-74) who received a fecal occult blood test in the past 2 years
% People (age 50-74) invited for screening*
20%
40%
ColonCancerCheck system go-live; 100+ PCPs receiving invitations for patient screening
SETP
Wait time funded hospitals submitting OR data
80%
CCAC SYSTEMS
% Home care assessments documented online*

1 Refers to Southwest Ontario Digital Imaging Network Project and LHIN 3 (Waterloo Wellington) and 4 (Hamilton Niagara Haldimand Brant) merge complete
* Targets to be determined

Table 10: Clinical Activity Information Systems: Solutions, Performance Indicators and Targets 2009-2012


2008/09
2009/10
2010/11
2011/12
Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
DI/PACS & PROVINCE-WIDE DI EXCHANGE
% Images taken at hospital that are digitally stored and shareable among physicians
% Images taken at clinics that are digitally stored and shareable among physicians*
25%
40%
70%
100%
Provincial DI exchange strategy complete
Hospital Diagnostic Imaging project repository services complete
Provincial DI exchange roll-out begins
SWODIN project and LHIN 3 & 4 merge complete1
Pan Northern Ontario PACS & Champlain merge complete
Greater Toronto Area West complete
PANORAMA
% Public Health-administered immunizations being captured in Panorama
% Total Ontario immunizations being captured in Panorama*
100%
Immunization & Vaccine Ordering and Delivery go-live
Communicable Disease and Outbreak go-live
Surveillance Analytics go-live
CDPM/COLONCANCERCHECK
% People (age 50-74) who received a fecal occult blood test in the past 2 years
% People (age 50-74) invited for screening*
20%
40%
ColonCancerCheck system go-live: 100+ PCPs receiving invitations for patient screening
SETP
Wait time funded hospitals submitting OR data
80%
CCAC SYSTEMS
% Home care assessments documented online*

1 Refers to Southwest Ontario Digital Imaging Network Project and LHIN 3 (Waterloo Wellington) and 4 (Hamilton Niagara Haldimand Brant) merge complete
* Targets to be determined

Technology Services

eHealth Ontario manages a number of technology services that are the bedrock of a well-functioning, secure and reliable provincial eHealth system. An assessment was conducted of these services to identify issues and actions for 2009-2012. As a foundational priority, Technology Services support the work of eHealth Ontario. Six technology services and the issues identified with each are presented below.

1. Data Centre
2. Network
3. Email
4. User Support
5. User Authentication /Registration
6. Application Maintenance

Data Centre

The Data Centre – which is managed by eHealth Ontario staff – consists of space leased from Hewlett Packard. The lease expires in fiscal year 2011-2012.

Issues: Major portions of the infrastructure are out of date and prone to failure. The Infrastructure Transformation Program (ITP) is addressing this issue. Outside of ITP, there is a strong tendency to over-engineer processes to the point of their becoming unusable. Not all leading practices are evident. Furthermore, responsibilities and accountabilities are unclear which increases the risk of outages and/or delays restoring service.

Network

Network connectivity – which is deployed, contracted for and funded by eHealth Ontario – is provided to all qualified healthcare providers including physician offices, community care access centers and hospitals. Currently, over 3,500 clients are connected.

Issues: The Managed Private Network (MPN) is a major point of contention in the field. Network deployments are slow and difficult often leading to expectations in the field that are not met. Some portions of the MPN are out of date and prone to failure. Currently, the MPN is outsourced to two vendors: Hydro One Telecom (HOT) and Allstream. The HOT contract is a complex relationship requiring a special management focus. The Allstream contract does not include levers to drive service excellence. eHealth Ontario is not adequately managing these contracts.

Email

The email service – ONE Mail – is offered to 225 organizations and 120,000 users connected to eHealth Ontario's network (e.g., physician offices, community care access centres, hospitals etc.).

Issues: The ONE Mail product is inferior to commercially available email offerings. Since ONE Mail depends completely on ONE Network, all email accounts are impacted if there is a network outage. This design limitation affects performance and reliability. In addition, the deployment of ONE Mail to new customers is significantly behind schedule for fiscal year 2008-2009.

User Support

Technical support is offered 24 hours a day, 7 days a week, 365 days a year. Support is provided using a partially outsourced model: an external vendor (xwave) provides some Tier 1 support services, and internal resources provide the remaining Tier 1, Tier 2 and Tier 3 support services*.

Issues: The vendor-based support desk does not have the tools necessary to resolve simple calls such as password resets. This results in a low success rate for resolving problems at the first point of contact call. Currently, the partially outsourced service desk is moving to a one entry point, fully in-sourced model within eHealth Ontario. This means that xwave is being transitioned out. Its contract expired on February 1, 2009.

* Tier 1 is the first client point of contact for a problem. Tier 2 is internal subject expert support. Tier 3 is external vendor support.

User Authentication /Registration

eHealth Ontario operates centralized registration processes that enable individual identification, authentication and access security to designated eHealth systems.

Issues: The registration processes at eHealth Ontario are time-consuming, manual, paper-based and result in a high level of frustration for customers. Currently, work is underway to improve the technology to support a more decentralized service model. This work will be completed in the first quarter of 2009. The Ministry of Health and Long-Term Care also has a separate project underway.

Application Maintenance

Support for applications (software) is provided as part of Tier 2 and 3 support*. Support includes incident and problem resolution, enhancement planning, release management and performance monitoring for the Ontario Lab Information System (OLIS), Drug Profile Review (DPV), Enterprise Master Patient Index (EMPI) and aspects of the five Community Care eHealth (CCeH) applications (shared responsibility between eHealth Ontario and the Ontario Association of Community Care Access Centres).

Issues: The application maintenance services are not consistent across all applications. Responsibilities and accountabilities are unclear which can delay releases and cause quality issues. In addition, governance structures are complex and confusing. After the transition of a system from development into maintenance, clients have been satisfied with the services that eHealth Ontario has performed.

Tables 11, 12 and 13 present the six technology services, actions and implementation timelines for 2009-2012, as well as the expected direction that costs will take.

Table 11: Technology Services: Actions in 2009-2012

Service	Actions in 2009-2012
Data Centre	▸ Deliver the mandate of the Smart Systems for Health Agency to provide a secure infrastructure by completing a managed service model.
	▸ Finalize the business plan (cost, timeline, staging, communications)
Network	▸ Pursue an internet strategy for small to medium client connectivity.
	▸ Restructure eHealth Ontario's role in network management from end-to-end provider of service to a manager of the program.
	▸ Present a plan and business case to the Board in 60 days.
Email	▸ Complete a managed service model for email services.
	▸ Present business plan to the Board in 60 days.
User Support	▸ Continue with the current service improvement plan.
User Authentication/ Registration	▸ Complete the development of the new solution approach that was started in the Identity, Access and Privacy Program (IAP) and combine with the eHealth Ontario project to achieve a unified approach.
Application Maintenance	▸ Work with project sponsors to improve governance structures.
	▸ Improve maintenance processes and develop accountability.
	▸ Refrain from entering into further application support agreements for applications outside of the approved eHealth Ontario Strategy.

* Tier 1 is the first client point of contact for a problem. Tier 2 is internal subject expert support. Tier 3 is external vendor support.

Table 12: Technology Services Implementation Timeline

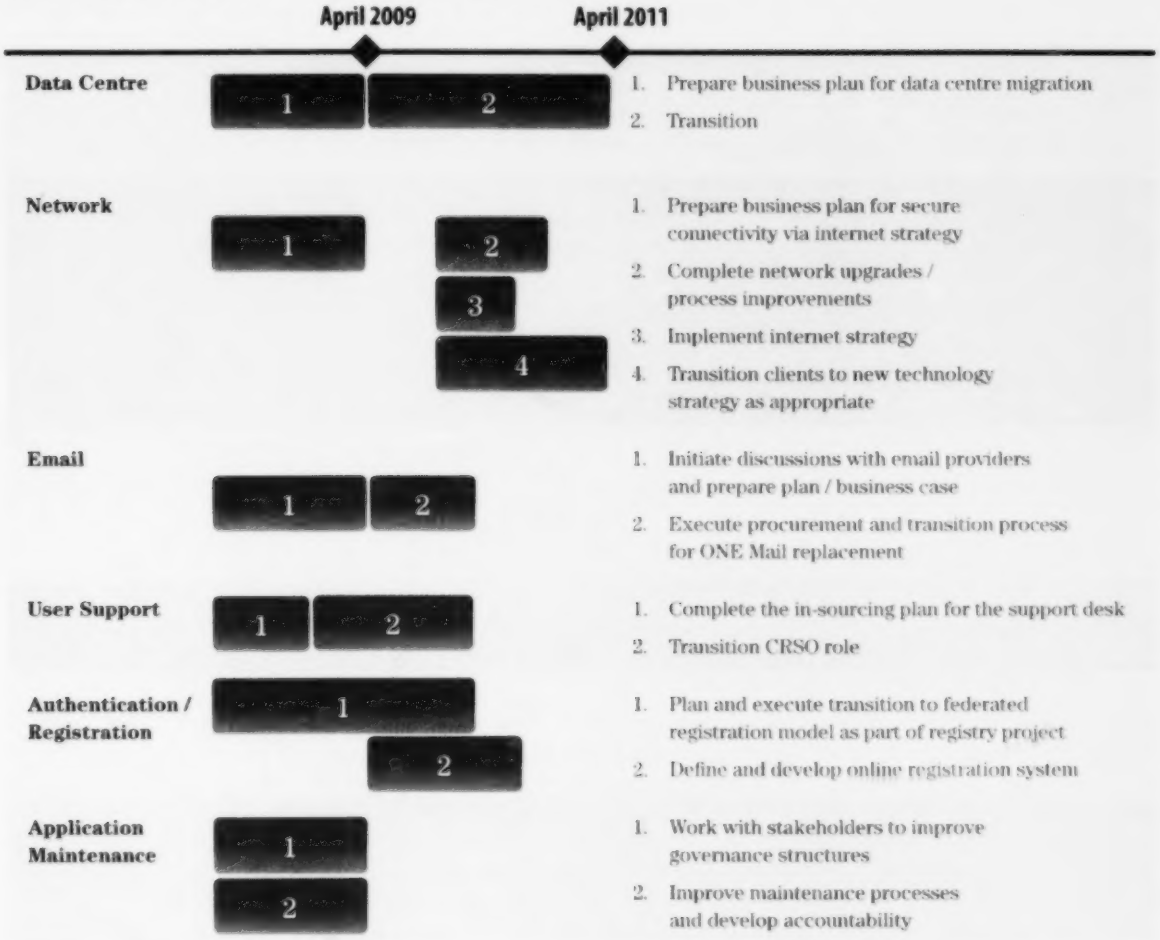


Table 13: Technology Services Financial Impact

	Directional Expectation of Cost*			
Service	**Year 1**	**Year 2**	**Ongoing**	**% of eHealth Ontario Operations Budget****
Infrastructure (Data Centre)	↑	↑	↓	23%
Infrastructure (Network)	↓	↓	↓	48%
Email	↔	↓	↓	4%
Support	↔	↔	↔	3%
Authentication / Registration	↔	↓	↓	3%
Application Maintenance	↔	↓	↓	11%

* Same book of business
** Remaining 8% relates to corporate services

LEGEND ↑ Increase in costs ↓ Decrease in costs ↔ Cost Neutral

Enabling Practices and Talent Management

Enabling practices and talent management will help eHealth Ontario to deliver the eHealth Strategy. Actions within this foundational priority focus on seven solutions:

1. Procurement and Contract Management
2. Program Management Office (PMO)
3. Architecture and Standards Development and Maintenance
4. Privacy
5. Metrics and Benefits Measurement Program
6. Data Quality Improvement Program
7. eHealth Human Resources Expansion Program

Each of these solutions and the actions for 2009-2012 are presented in Table 14.

Table 14: Enabling Practices and Talent Management: Actions in 2009-2012

Area	Actions in 2009-2012
Procurement and Contract Management	▸ Adopt robust, fair and cost-effective procurement processes in partnership with Infrastructure Ontario and other organizations. ▸ Apply sound and rigorous contract management practices.
Program Management Office (PMO)	▸ Manage all projects and initiatives consistently, ensuring they are delivered cost-effectively and in accordance with clear and approved plans. ▸ Require all project teams to provide clear and regular progress reports on projects and programs.
Architecture and Standards Development and Maintenance	▸ Implement all eHealth Ontario solutions within a coherent provincial eHealth architecture which is designed to deliver clinical value. ▸ eHealth Ontario solutions will adhere and contribute to relevant eHealth standards. ▸ Ensure that the eHealth solutions implemented are capable of being integrated into a comprehensive, standardized and interoperable electronic health record infostructure. ▸ Incorporate Pan-Canadian standards for terminology and messaging, where appropriate, to ensure interoperability.

Area	Actions in 2009-2012
Privacy	▸ Employ the "privacy by design" * concept which ensures electronic tools and information are designed to enhance, rather than erode, privacy (i.e., "build in privacy from the start"). "Privacy by design" is a critical enabler of electronic health records because it reduces possible privacy incidents and the resources required to manage them. ▸ eHealth Ontario solutions will be informed by the Information and Privacy Commissioner and privacy experts. ▸ eHealth Ontario will continue to conduct privacy impact assessments on eHealth solutions.
Metrics and Benefits Measurement Program	▸ Indicators of clinical value will be built into all system and project plans, along with clear procedures for measuring them. ▸ Prescribe target levels for indicators with input from clinicians. Measure progress against these targets and report to all stakeholders as part of the eHealth Ontario accountability framework. Partner with other organizations to collect and report on these metrics including the Ontario Medical Association, the Ontario Hospital Association and the Ontario Association of Community Care Access Centres.
Data Quality Improvement Program	▸ Adopt measures at several levels to improve and ensure data quality (e.g., Identity, Access and Privacy solutions will rigorously control who is allowed to view, add, change and delete each type of record; rigorous edit and validation features will be used to detect and screen out erroneous data; standards for data accuracy, quality, timeliness and completeness will be established and enforced).
Health Human Resources Expansion Program	▸ Develop programs to expand the number of skilled professionals with experience in eHealth-related fields. ▸ Explore opportunities to support programs in Ontario universities and colleges to increase the pool of resources available to contribute to eHealth initiatives. ▸ Work with eHealth implementation teams across the province to develop methods for increasing their complement of skilled staff. Enabling capabilities are required to deliver the Strategy through apprenticeship and on-the-job training. Note: These actions recognise that the current complement of experienced eHealth human resources in Ontario is insufficient to implement all the components of the Strategy in three years. Furthermore, demand for these individuals is increasing across North America as governments and healthcare organizations recognize that eHealth is the key to meaningful health reform.

* "Privacy by Design" is a term Dr. Ann Cavoukian, Information and Privacy Commissioner, Ontario, originated in the 1990s.

How the Strategy will Benefit Ontarians

The true measure of success of the Ontario eHealth Strategy is improved health and healthcare for Ontarians. The three clinical priorities will directly impact on the quality of care received by patients and will improve their clinical outcomes. The Strategy's foundational priorities will improve patient outcomes by supporting the clinical priorities.

Clinical benefits will start to accrue to patients in the first year of the Strategy. This deliberate focus on early clinical benefits will help enlist support from clinicians and the public, and generate momentum for eHealth in Ontario.

Diabetes Management

Patients will:

- View their own health information and track how well they are doing against targets that have been set for them.
- Access health education materials more quickly and easily.
- Notice that their primary care provider and emergency departments have access to their diabetes record, and will not be asked for the same information all the time.
- Receive reminders from their primary care providers about tests or treatments that are overdue.
- Set approved care plan goals and track their progress with their primary care providers.
- Receive information about their conditions with practical steps to improve their health.
- Suffer fewer complications of their disease.

Medication Management

Patients will:

- Notice that their primary care provider and emergency departments have access to their medication list to better manage their care.
- Receive reminders from their primary care provider about their medication needs.
- Put in a request for refills online resulting in fewer office visits to their primary care provider.
- Experience reduced adverse drug events.
- Visit hospitals less.
- Experience lower rates of morbidity and mortality related to drug errors.

Wait Times

Patients will:

- Have shorter wait times in emergency departments.
- Experience decreased wait time for beds in other care settings (e.g., acute care, long-term care).
- Have improved access to community services.
- Be able to look up hospital wait times across the province online.
- Increasingly receive the most appropriate and effective care in the most appropriate care setting.
- Access more information about wait times in hospitals (emergency room waits in particular).

EXECUTING THE STRATEGY

eHealth Ontario is committed to successfully executing the Strategy and being held accountable for meeting its clinical and foundational priorities on time and on budget. The agency recognises that it cannot accomplish all this work on its own nor can it use a "one size fits all" approach for the numerous initiatives in the Strategy. eHealth Ontario also clearly understands the risks to executing the Strategy and has identified mitigation tactics to minimise these risks.

Part Four addresses:

- Leveraging and partnering with others to execute the Strategy;
- Engaging thought and delivery leaders;
- Using the most appropriate delivery model for each initiative; and
- Knowing the risks to the Strategy and mitigation tactics.

Leveraging and Partnering with Others to Execute the Strategy

A number of organizations in Ontario deliver and support eHealth solutions. Some of the major organizations and the number of staff dedicated to this work are presented in Table 15. Additional work is needed to identify all the delivery organizations across the province.

Table 15: eHealth Delivery Organizations in Ontario

Organization	Approximate Number of Staff	Area Serviced
eHealth Ontario	700 people	Clinicians across Ontario
Health Services Information and Information Technology Cluster (HSC)	600 people	MOHLTC, Ministry of Health Promotion and their agents
Shared Information Management Services (SIMS)	400 people	Clinicians and patients in the GTA
Cancer Care Ontario (CCO)	220 people	Clinicians and patients across Ontario
Ontario Telemedicine Network (OTN)	170 people	Clinicians and patients across Ontario
eHealth Program (Ministry of Health and Long-Term Care)	150 people	Clinicians and patients across Ontario
OntarioMD (Ontario Medical Association)	60 people	Physicians across Ontario
electronic Child Health Network (eCHN)	40-50 people	Pediatric clinicians and patients across Ontario
Consolidated Health Information Services (CHIS)	40+ people	Healthcare clients offering IT services to member organizations in Southwest Ontario
Ontario Association of Community Care Access Centres (OACCAC)	40 people	Support CCACs across Ontario; increase ability for CCACs to serve clients

A significant number of people deliver eHealth solutions in Ontario's hospitals. Table 16 shows that almost 2,000 full-time equivalent staff work in eHealth in acute teaching hospitals, community hospitals, small hospitals, complex continuing care facilities, rehabilitation facilities and mental health facilities in the province.

Table 16: eHealth Delivery Human Resources by Local Health Integration Network

Local Health Integration Network	Approximate Number of IT Full-time Equivalents	Approximate # Facilities
Erie St. Clair*	78	5
South West	275	16
Waterloo Wellington	95	8
Hamilton Niagara Haldimand Brant	155	10
Central West	47	2
Mississauga Halton	90	3
Toronto Central**	686	17
Central	107	7
Central East	131	9
South East	41	7
Champlain	88	19
North Simcoe Muskoka	47	7
North East	109	22
North West	42	13
Total	1991	145

Facilities include acute teaching hospitals, community hospitals, small hospitals, CCC, rehabilitation, mental health.
* Includes Consolidated Health Information Services (CHIS) resources;
** Includes Shared Information Management Services resources SIMS)
Source: Ontario Hospital Survey, Ontario Hospital Association, January 2009

eHealth Ontario will leverage human resources and partner with organizations and associations, where appropriate, to execute the Strategy. These collaborations will not only provide capacity to help execute the Strategy, they will also help build commitment to the work of eHealth Ontario across the province.

Engaging Thought and Delivery Leaders

eHealth Ontario will actively engage thought and delivery leaders in project planning, oversight and execution. Advisory Councils will provide direction on the overall eHealth Strategy whereas Project Advisory Groups will provide direction on specific initiatives. The councils and groups, and their proposed membership and responsibilities are outlined below.

Advisory Councils

Provide direction on the overall eHealth Strategy

LHIN e-Health Leads Council

- Co-chaired by eHealth Ontario CEO and a LHIN eHealth Lead
- All LHIN eHealth Leads
- Additional members from other organizations that are responsible for delivering components of the Strategy such as Cancer Care Ontario, OntarioMD, Ontario Telemedicine Network, Ontario Association of Community Care Access Centres.
- Modify membership to include clinical experts
- Reviews progress against the Strategy and provide advice to the eHealth Ontario executive
- Meets monthly

Ontario Health Informatics Standards Council

- To be co-chaired by eHealth Ontario Enterprise Architect and a health sector representative
- Membership to include Ministry of Health and Long-Term Care Standards, eHealth Ontario, health sector representatives, an Information Technology Association of Canada vendor representative, standards leaders
- Focuses on health informatics standards – including pan-Canadian standards – that improve data quality and make eHealth a reality

eHealth Clinical Expert Panel

- Membership to include leading practising clinicians
- Provides advice on clinician engagement, the Strategy and the implementation approach
- Meets semi-annually

Strategic Advisory Council

- Membership to include selected Ontario health leaders and information technology experts
- Provides strategic advice on eHealth initiatives
- Meets semi-annually

International Expert Panel

- Membership to include experts from other jurisdictions that have achieved large-scale eHealth implementations similar to those outlined in the Strategy
- Meets 1-2 times per year to advise eHealth Ontario on it Strategy and implementation tactics

Project Groups

To provide direction on specific initiatives

Physician eHealth Council

- Co-Chaired by eHealth Ontario CEO and the Ontario Medical Association CEO

Project Steering Committees

- Co-chaired by Business Sponsor and eHealth Ontario Lead
- Members from appropriate stakeholder groups
- Provides direction to the project manager and a mechanism for continuing input from stakeholder groups
- Allows healthcare delivery resources to be consulted on major procurement processes

Clinical Expert Panels for Key Projects

- Chaired by clinical subject matter expert
- Members with expertise in the clinical subject area
- Provides direction on functional specifications and clinical workflows to the project team
- Makes recommendations to eHealth Ontario and MOHLTC on project scope changes or policy changes required for project success

Using the Most Appropriate Delivery Model for Each Initiative

The eHealth Ontario Strategy includes a wide range of initiatives that vary in size, complexity, timeframe, stage of development and other characteristics. It is not possible to use one simple approach to execute all the projects. The most appropriate delivery model will be selected for each initiative.

There are five delivery models:

1. Province-wide application; provincial standards; managed/hosted by eHealth Ontario.
2. Province-wide application; provincial standards; not managed/hosted by eHealth Ontario.
3. Regional applications (more than 1 Local Health Integration Network); provincial standards.
4. Local Health Integration Network, hospital or physician office applications; provincial standards.
5. Local Health Integration Network, hospital or physician office applications; no provincial standards.

Solutions with province-wide applications have the following characteristics:

- Data is required across the province
- The solution is very well defined and can interoperate easily with a wide variety of clinical system vendors.
- The solution supports province-wide programs or strategies

The solutions best managed at a regional level have the following characteristics:

- The solution handles clinical information that supports or follows referral patterns.
- Solutions require tight integration with legacy systems.

The solutions best managed locally include:

- A wide variety of legacy application vendors are already installed.
- Few standards exist resulting in incompatible data models and user interfaces.
- Strong influence on local clinical workflows.
- Cost of moving to standard platforms is very high.

Each solution in the eHealth Strategy has been assigned to the appropriate delivery model (Table 17).

Table 17: Ontario's eHealth Strategy Solutions by Delivery Model

1	2	3	4	5
Province-wide application; provincial standards; managed/ hosted by eHealth Ontario	Provide-wide application; provincial standards; not managed/hosted by eHealth Ontario	Regional applications (more than 1 LHIN); provincial standards	LHIN, hospital or physician office applications; provincial standards	LHIN, hospital or physician office applications; no provincial standards
▸ Diabetes Registry ▸ Drug Information System ▸ Drug Profile Viewer ▸ Client Registry ▸ Provider Registry ▸ User Registry ▸ Consent Registry ▸ Ontario Lab Information System ▸ Province-wide Diagnostic Imaging Exchange ▸ Panorama ▸ Health Information Access Layer	▸ Wait Time Information System ▸ Emergency Department Reporting System ▸ Telemedicine ▸ Electronic Child Health Network ▸ Chronic Disease Management and Prevention/Colon CancerCheck ▸ Critical Care Information System ▸ Surgical Efficiency Target Program ▸ Community Care Information Management	▸ Diagnostic Imaging/ PACS ▸ Health Information Access Layer	▸ eReferral Systems ▸ Physician Electronic Medical Records ▸ Community Care Access Care Systems	▸ Hospital Information Systems
Portal				

Knowing the Risks to the Strategy and Mitigation Tactics

Risks to executing the Strategy must be mitigated. These risks – which are at the individual project and overall strategy level – will be tracked through their life cycle from when they are first identified until they have been effectively mitigated.

The following risks pertain to the execution of the Strategy as a whole (Table 18).

Table 18: Risks of Executing the Strategy and Mitigation Tactics

Risk	Probability	Impact	Mitigation Tactics
Insufficient human resources are available to execute Strategy	High	High	Partner with other sources of labor in the short term Support eHealth capacity to expand in the longer term
Internal staff upheaval, retention issues and low morale through the transition	High	Medium	Implement sound change management, communication and engagement strategy
Delivery partner model results in fragmentation and diffusion of accountability	Medium	High	Establish a strong accountability framework that defines roles and responsibilities, as well as repercussions for the failure to deliver
Physician eHealth Electronic Medical Record (EMR) uptake is slower than expected	Medium	Medium	Provide clinically valuable data and function/ utility through EMRs Provide incentive funding (focused on utilization)
Limited buy-in from stakeholders	Medium	Medium	Socialize stakeholders about the Strategy in the near term Involve stakeholders in initiatives and governance
Delays in eHealth Program transition from the Ministry of Health and Long-Term Care to eHealth Ontario	Medium	Medium	Continue to collaborate with the Ministry on decisions, direction and initiative execution.
Unforeseen healthcare priorities emerge (e.g., SARS)	Low	High	Structure commitments to allow for re-allocation of funds if necessary

Privacy and confidentiality of sensitive personal health information is a right under the law. eHealth Ontario recognizes that privacy-related risks must be managed and privacy rights protected. Incorporating privacy safeguards into electronic applications and supporting procedures will be a key enabler of the Strategy. The following risks pertain to privacy issues (Table 19).

Table 19: Risks Pertaining to Privacy Issues and Mitigation Tactics

Risk	Probability	Impact	Mitigation Tactics
Uncertain legal environment The Personal Health Information Protection Act (PHIPA) is currently under review (a review is required every three years) The Standing Committee on Social Policy has recommended amending section 73(1)(h) of PHIPA to allow for the creation of eHealth-related regulations Future regulations to be determined and regulation making process can be lengthy	High	High	▸ eHealth Ontario will work closely with the Information and Privacy Commissioner and MOHLTC to ensure the timely development of regulations required to support initiatives.
Low trust in the privacy practices of the former Smart Systems for Health Agency (SSHA) as per the March 2007 IPC review	Medium	Medium	▸ Information & Privacy Commissioner has worked collaboratively with the President and CEO in her previous capacity. eHealth Ontario is committed to open and ongoing dialogue with IPC on all aspects of the strategy.
Current privacy strategies at eHealth Ontario and the Ministry's eHealth Program are not streamlined	Medium	Medium	▸ In consultation with the Information & Privacy Commissioner and other stakeholders, a privacy strategy and supporting draft regulations will be developed and implemented.

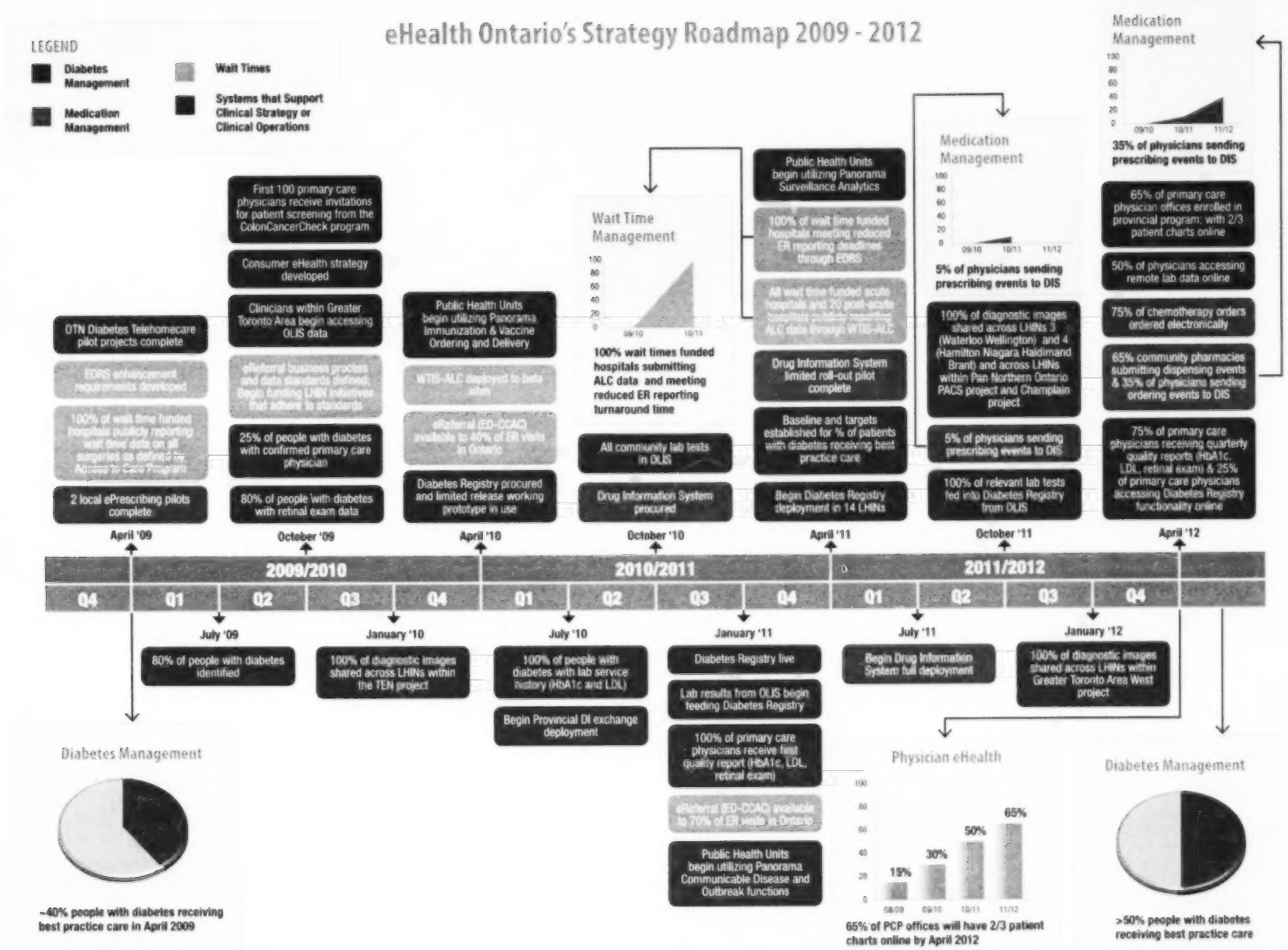
CONCLUSION

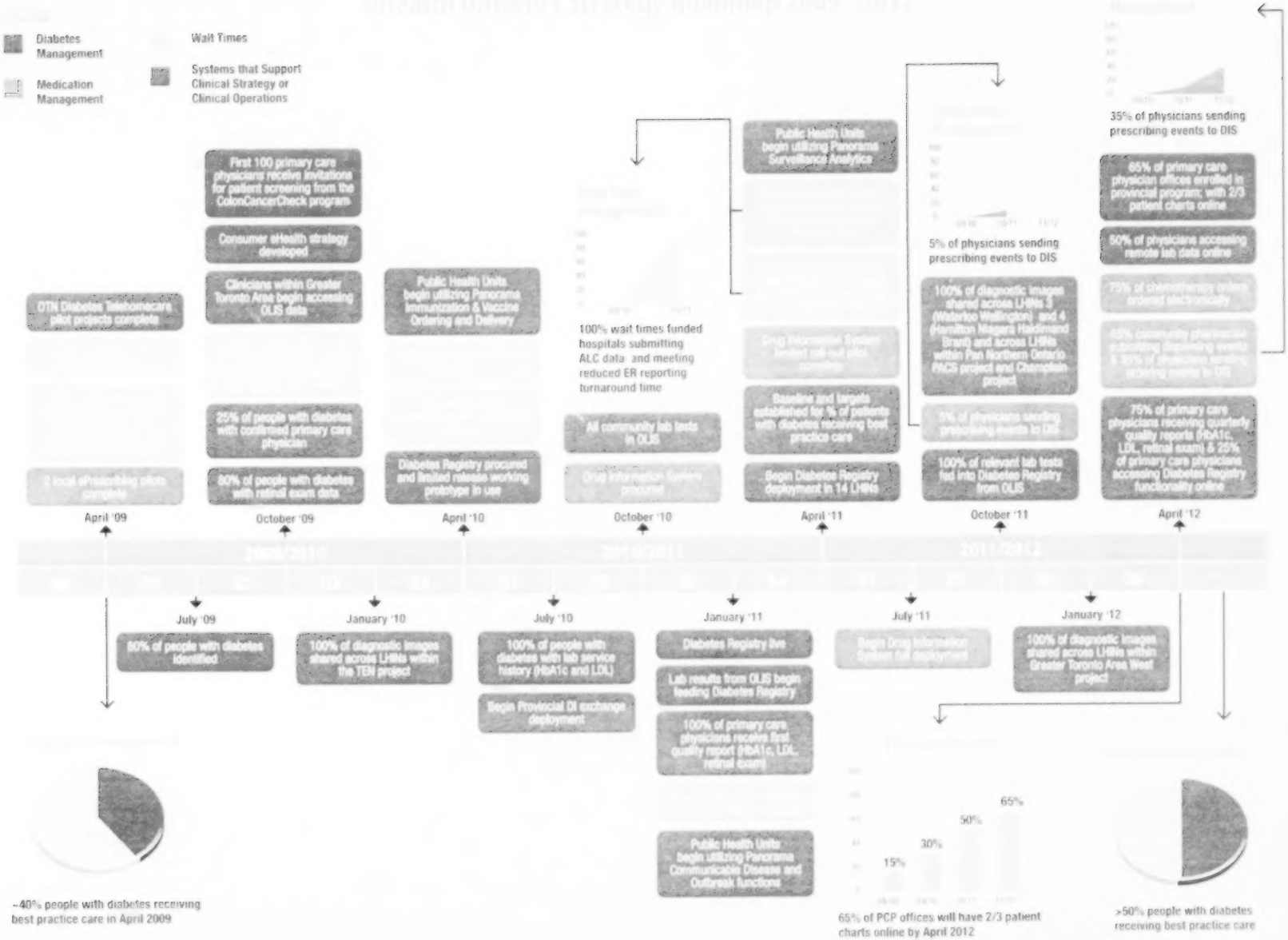
eHealth Ontario is committed to successfully executing the Strategy and being held accountable for meeting its clinical and foundational priorities on time and on budget. Appendix A includes the eHealth Strategy's Roadmap.

The government of Ontario is investing the political will and the investment capital needed to make this Strategy a success.

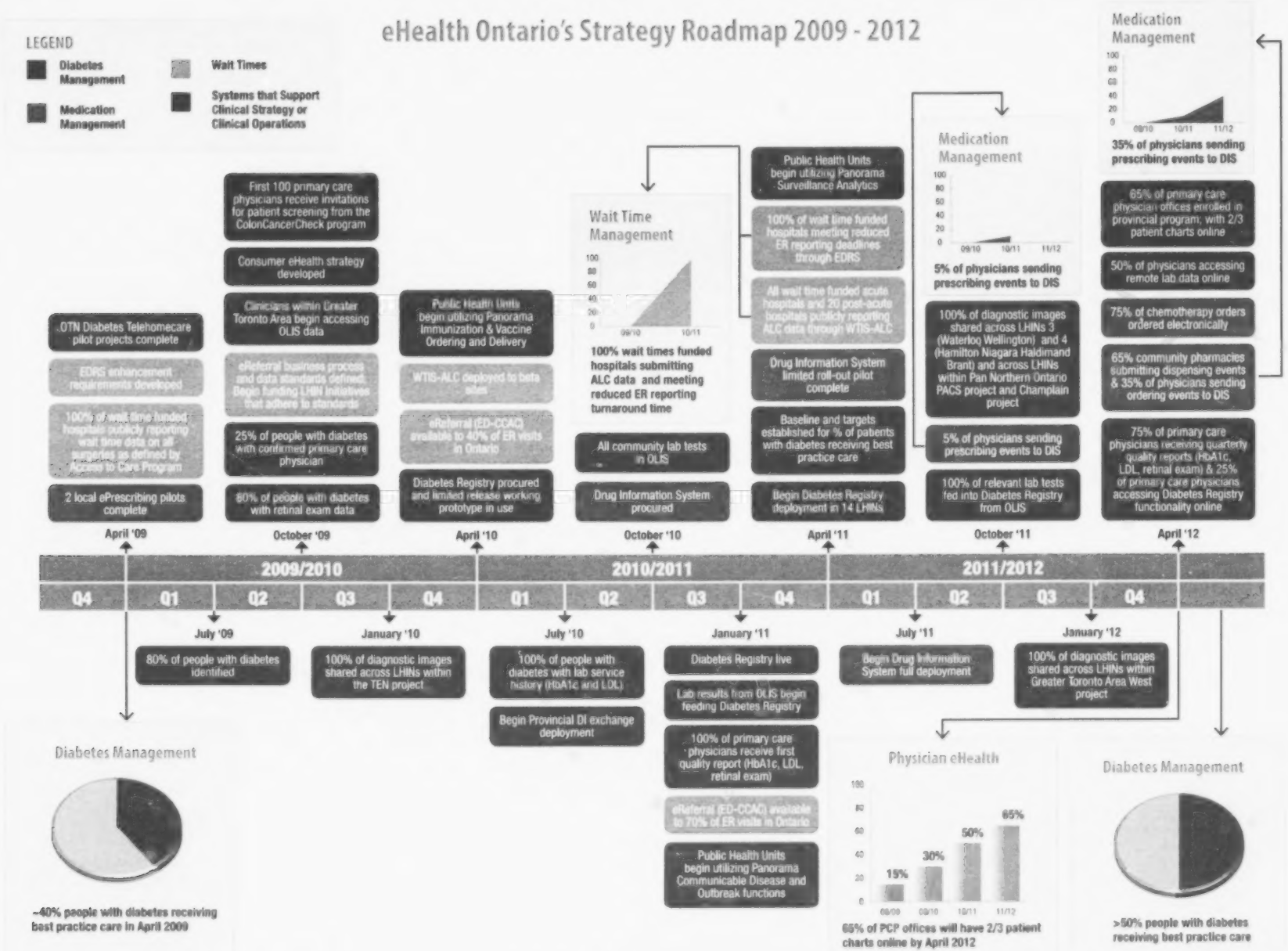
eHealth Ontario will remain **focused** and achieve its goals with commitment and conviction. Its true measure of success will be **improved health and healthcare** for Ontarians. The three clinical priorities will directly impact on the quality of care received by patients and will improve their clinical outcomes. The Strategy's foundational priorities will also **improve patient outcomes** by supporting the clinical priorities. Patients will start to see clinical benefits in the first year of the Strategy. This focus on **early benefits** will generate momentum for eHealth in the province and will encourage clinicians and the public to **work together** to improve healthcare. eHealth Ontario looks forward to being part of this work, and **achieving excellence** in healthcare by harnessing the power of information for the benefit of Ontarians.

eHealth Ontario's Strategy Roadmap 2009 - 2012


LEGEND
Diabetes Management
Wait Times
Medication Management
Systems that Support Clinical Strategy or Clinical Operations
2 local ePrescribing pilots complete
OTN Diabetes Telehomecare pilot projects complete
EDRS enhancement requirements developed
100% of wait time funded hospitals publicly reporting wait time data on all surgeries as defined by Access to Care Program
80% of people with diabetes with retinal exam data
25% of people with diabetes with confirmed primary care physician
eReferral business process and data standards defined. Begin funding LHIN interfaces that adhere to standards
Clinicians within Greater Toronto Area begin accessing OLIS data
Consumer eHealth strategy developed
First 100 primary care physicians receive invitations for patient screening from the ColonCancerCheck program
Diabetes Registry procured and limited release working prototype in use
eReferral (ED-CCAC) available to 40% of ER visits in Ontario
WTIS-ALC deployed to beta sites
Public Health Units begin utilizing Panorama Immunization & Vaccine Ordering and Delivery
Drug Information System procured
All community lab tests in OLIS
Wait Time Management
100% wait times funded hospitals submitting ALC data and meeting reduced ER reporting turnaround time
Begin Diabetes Registry deployment in 14 LHINs
Baseline and targets established for % of patients with diabetes receiving best practice care
Drug Information System limited roll-out pilot complete
ALC data through WTIS-ALC
100% of wait time funded hospitals meeting reduced ER reporting deadlines through EDRS
Public Health Units begin utilizing Panorama Surveillance Analytics
100% of relevant lab tests fed into Diabetes Registry from OLIS
5% of physicians sending prescribing events to DIS
100% of diagnostic images shared across LHINs 3 (Waterloo Wellington) and 4 (Hamilton Niagara Haldimand Brant) and across LHINs within Pan Northern Ontario PACS project and Champlain project
Medication Management
5% of physicians sending prescribing events to DIS
75% of primary care physicians receiving quarterly quality reports (HbA1c, LDL, retinal exam) & 25% of primary care physicians accessing Diabetes Registry functionality online
65% community pharmacies submitting dispensing events & 35% of physicians sending ordering events to DIS
75% of chemotherapy orders ordered electronically
50% of physicians accessing remote lab data online
65% of primary care physician offices enrolled in provincial program; with 2/3 patient charts online
Medication Management
35% of physicians sending prescribing events to DIS
April '09
October '09
April '10
October '10
April '11
October '11
April '12
2009/2010
2010/2011
2011/2012
Q4
Q1
Q2
Q3
Q4
Q1
Q2
Q3
Q4
Q1
Q2
Q3
Q4
July '09
January '10
July '10
January '11
July '11
January '12
80% of people with diabetes identified
100% of diagnostic images shared across LHINs within the TEN project
100% of people with diabetes with lab service history (HbA1c and LDL)
Begin Provincial DI exchange deployment
Diabetes Registry live
Lab results from OLIS begin feeding Diabetes Registry
100% of primary care physicians receive first quality report (HbA1c, LDL, retinal exam)
eReferral (ED-CCAC) available to 70% of ER visits in Ontario
Public Health Units begin utilizing Panorama Communicable Disease and Outbreak functions
Begin Drug Information System full deployment
100% of diagnostic images shared across LHINs within Greater Toronto Area West project
Diabetes Management
~40% people with diabetes receiving best practice care in April 2009
Physician eHealth
15%
30%
50%
65%
65% of PCP offices will have 2/3 patient charts online by April 2012
Diabetes Management
>50% people with diabetes receiving best practice care


Diabetes Management
Medication Management
Wait Times
Systems that Support Clinical Strategy or Clinical Operations
OTN Diabetes Telehomecare pilot projects complete
2 local ePrescribing pilots complete
First 100 primary care physicians receive invitations for patient screening from the ColonCancerCheck program
Consumer eHealth strategy developed
Clinicians within Greater Toronto Area begin accessing OLIS data
25% of people with diabetes with contracted primary care physician
80% of people with diabetes with retinal exam data
Public Health Units begin utilizing Panorama Immunization & Vaccine Ordering and Delivery
Diabetes Registry procured and limited release working prototype in use
100% wait times funded hospitals submitting ALC data and meeting reduced ER reporting turnaround time
All community lab tests in OLIS
Drug Information System procured
Public Health Units begin utilizing Panorama Surveillance Analytics
Drug Information System limited release pilot complete
Baseline and trends established for % of patients with diabetes receiving best practice care
Begin Diabetes Registry deployment in 14 LHINs
5% of physicians sending prescribing events to DIS
100% of diagnostic images shared across LHINs 3 (Waterloo Wellington) and 4 (Hamilton Niagara Haldimand Brant) and across LHINs within Pen Northern Ontario PACS project and Champlain project
5% of physicians sending prescribing events to DIS
100% of relevant lab tests fed into Diabetes Registry from OLIS
35% of physicians sending prescribing events to DIS
65% of primary care physician offices enrolled in provincial program; with 2/3 patient charts online
50% of physicians accessing remote lab data online
75% of chemotherapy orders entered electronically
75% of primary care physicians receiving quarterly quality reports (HbA1c, LDL, retinal exam) & 25% of primary care physicians accessing Diabetes Registry functionality online
April '09
October '09
April '10
October '10
April '11
October '11
April '12
July '09
80% of people with diabetes identified
January '10
100% of diagnostic images shared across LHINs within the TEN project
July '10
100% of people with diabetes with lab service history (HbA1c and LDL)
Begin Provincial DI exchange deployment
January '11
Diabetes Registry live
Lab results from OLIS begin feeding Diabetes Registry
100% of primary care physicians receive first quality report (HbA1c, LDL, retinal exam)
Public Health Units begin utilizing Panorama Communicable Disease and Outbreak functions
July '11
Ontario Drug Information System live deployment
January '12
100% of diagnostic images shared across LHINs within Greater Toronto Area West project
~40% people with diabetes receiving best practice care in April 2009
65% of PCP offices will have 2/3 patient charts online by April 2012
15%
30%
50%
65%
>50% people with diabetes receiving best practice care

eHealth Ontario's Strategy Roadmap 2009 - 2012


LEGEND
Diabetes Management
Medication Management
Wait Times
Systems that Support Clinical Strategy or Clinical Operations
OTN Diabetes Telehomecare pilot projects complete
EDRS enhancement requirements developed
100% of wait time funded hospitals publicly reporting wait time data on all surgeries as defined by Access to Care Program
2 local ePrescribing pilots complete
April '09
First 100 primary care physicians receive invitations for patient screening from the ColonCancerCheck program
Consumer eHealth strategy developed
Clinicians within Greater Toronto Area begin accessing OLIS data
eReferral business process and data standards defined. Begin funding LHIN initiatives that adhere to standards
25% of people with diabetes with confirmed primary care physician
80% of people with diabetes with retinal exam data
October '09
Public Health Units begin utilizing Panorama Immunization & Vaccine Ordering and Delivery
WTIS-ALC deployed to beta sites
eReferral (ED-CCAC) available to 40% of ER visits in Ontario
Diabetes Registry procured and limited release working prototype in use
April '10
Wait Time Management
100% wait times funded hospitals submitting ALC data and meeting reduced ER reporting turnaround time
All community lab tests in OLIS
Drug Information System procured
October '10
Public Health Units begin utilizing Panorama Surveillance Analytics
100% of wait time funded hospitals meeting reduced ER reporting deadlines through EDRS
All wait time funded acute hospitals and 20 post-acute hospitals publicly reporting ALC data through WTIS-ALC
Drug Information System limited roll-out pilot complete
Baseline and targets established for % of patients with diabetes receiving best practice care
Begin Diabetes Registry deployment in 14 LHINs
April '11
Medication Management
5% of physicians sending prescribing events to DIS
100% of diagnostic images shared across LHINs 3 (Waterloo Wellington) and 4 (Hamilton Niagara Haldimand Brant) and across LHINs within Pan Northern Ontario PACS project and Champlain project
5% of physicians sending prescribing events to DIS
100% of relevant lab tests fed into Diabetes Registry from OLIS
October '11
Medication Management
35% of physicians sending prescribing events to DIS
65% of primary care physician offices enrolled in provincial program; with 2/3 patient charts online
50% of physicians accessing remote lab data online
75% of chemotherapy orders ordered electronically
65% community pharmacies submitting dispensing events & 35% of physicians sending ordering events to DIS
75% of primary care physicians receiving quarterly quality reports (HbA1c, LDL, retinal exam) & 25% of primary care physicians accessing Diabetes Registry functionality online
April '12
2009/2010
2010/2011
2011/2012
Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
July '09
80% of people with diabetes identified
January '10
100% of diagnostic images shared across LHINs within the TEN project
July '10
100% of people with diabetes with lab service history (HbA1c and LDL)
Begin Provincial DI exchange deployment
January '11
Diabetes Registry live
Lab results from OLIS begin feeding Diabetes Registry
100% of primary care physicians receive first quality report (HbA1c, LDL, retinal exam)
eReferral (ED-CCAC) available to 70% of ER visits in Ontario
Public Health Units begin utilizing Panorama Communicable Disease and Outbreak functions
July '11
Begin Drug Information System full deployment
January '12
100% of diagnostic images shared across LHINs within Greater Toronto Area West project
Diabetes Management
~40% people with diabetes receiving best practice care in April 2009
Physician eHealth
15%
30%
50%
65%
65% of PCP offices will have 2/3 patient charts online by April 2012
Diabetes Management
>50% people with diabetes receiving best practice care

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